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BULBS FOR POTS

AND FALL PLANTING IN THE GARDEN



A CATALOG OF THE BULBS OF THE AMARYLLIS, IRIS, ORCHID AND OTHER PLANT FAMILIES

Articles: How to Grow Amaryllis;—Gladiolus;—Billbergias; etc. Culture
Directions for All Bulbs and Plants Listed. Special Listings of Orchids,
Saintpaulias and Gloxinias.

A PERSONAL LETTER To You.

FALL 1950



CECIL HOUDYSHELE

1412 Third St.

La Verne, California

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Agriculture
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A PERSONAL LETTER — TO YOU

Dear Floral Friends,

Again the plants listed and the culture directions have taken nearly all our catalog space. I had a 3 page letter written to you but there is less than one page available, apparently.

In my Jan. letter, I suggested that we have "Fun in 50." I am still promoting the same idea as there are 4 more months in 50. And why not "More fun, in 51"? Garden fun, of course.

I am happy to tell you that we were fortunate in being able to find some hard-to-get Lilies to add to our listings; a very rare Amaryllis and an equally rare Haemanthus, a Clivia and Anthuriums. We have divided some fine Cattleya orchids and offer them at a new very low price. We have many more varieties of Saintpaulias and 6 new Gloxinias that are probably not offered by any other American catalog. I was lucky to find in Holland 10 var. Tulips in the best Darwin, Ideal Darwin and Triumph types, in the largest size, 12 cm., that I can list at much below recent prices. If you find any listed at a lower price I am sure they must be assorted var. and smaller in size. One centimeter difference in size makes considerable difference in price and results. We give you the size of our tulips. Anything above 10 cm. might be called "large."

Many gardeners are interested in growing seed. It is better to grow your own seed and we offer many bulbs and plants that are rare and of which you will be unable to purchase seed. It is interesting to cross varieties to produce hybrids.

In this catalog I tell you about many that produce easily grown seed. Sometimes culture information is given along, but most of the culture information could be given in a few words by saying, "Culture, the same as for radish seed." There is nothing mysterious about growing bulbs from seed or about plant breeding even tho the results may be very wonderful.

Many amateur growers have crossed Iris, Gladiolus, Daylilies, etc. and have had excellent success. Many of our horticultural types were produced by amateur growers.

Two years ago, I crossed two Marica species and raised 12 plants. One of them multiplies more rapidly, has larger, better and twice as many flowers. I can list it in 1952. None for sale now.

Please note our advice to subscribe for Popular Gardening under "Sources of more information" on pg. 5. Please mention us when you subscribe. If you subscribe and tell us that you gave us the credit, we will include with any \$2.50 order before Jan. 1, one bulb of Houdyshel's Hybrid Scilla peruviana, value 75c.

Are you interested in colored slides of our bulbs and plants, with a written lecture? Mrs. Houdyshel has several sets. Tell her what you are interested in and she will send you her terms.

Sincerely,
Cecil Houdyshel

TERMS AND INSTRUCTIONS FOR ORDERING

Many customers order without reading the following instructions. This is a grave error that may delay your order or cause you to make errors. Study these instructions carefully and comply with all.

The prices in this catalog cancel all former quotations.

California customers must add 3% **Sales Tax**.

Remit by check or M.O. If stamps are sent, send \$1.05 for \$1.00. We do not carry accounts. Remit the full amount of your order in advance.

C.O.D. We do not ship bulbs C.O.D.

Postage prepaid on orders of \$1.00 or over. Under \$1.00, add 15c extra. Many ignore this. No small orders will be filled unless you comply.

Insurance and Special Handling. Please note changes in rates. **Insurance** up to \$5.00 value costs 5c. \$5.00 to \$10.00 costs 10c. \$10.00 to \$25.00 costs 15c. Over \$25.00 costs in proportion to \$25.00 rate. **Special Handling** gives your package the same handling as First Class mail and hastens delivery. More

safe. Up to 2 lbs. costs 15c. 2 lbs. to 20 lbs. costs 20c for each package. Heavier in proportion.

Special Delivery of packages costs you 25c for 2 lbs. or less. 2 to 10 lbs. costs 35c. Over 10 lbs. costs 45c. This hastens transportation and delivery of your package as it will also be given the same service as Special Handling without an extra fee. Most postoffices require that you sign for the package. Thus it is not left outside to freeze.

Insurance, Special Handling and Special Delivery are for your protection. Please remit the amount required if you want this protection.

Express is much the safest transportation. Express cars are heated in winter but mail cars are not. Express also handles more carefully and assumes more responsibility for delivery in good order. But it costs more and we ship that way only collect. We add extra bulbs to approximate cost of postage saved to us.

Prices given are usually for one bulb. A dozen costs 10 times the price of one; 6 are sold at dozen rate; 100 cost 70 times the cost of one or 7 times the cost of one doz.; 50 are sold for the price of 4 doz., not at 100 rate, unless otherwise specified.

Wholesale. We give no discounts to dealers on small quantities of items from this catalog. Only a very few items herein can be quoted below the quantity rates, when given. But in most cases those rates are about equal to usual wholesale prices. Upon inquiry we will quote prices on desired items if able.

Foreign orders. Our prices include prepaid delivery as far as our 8th postal zone. We can usually prepay to Mexico or Canada. It is best to include some extra on export orders. If too much, we add extra bulbs. The 100 rate prices do not apply on export orders unless customer pays transportation. Air mail is often advisable for export orders but expensive.

Foreign customers are at a disadvantage since to distant countries our catalogs may require from 2 to 4 weeks in transit, and almost an equal time for the arrival of orders. You are advised to have catalogs sent by air mail. To do that, send us a draft or money order for \$1.00. This credit will be placed on your card. Catalogs will be sent air mail until the amount is used up, or any balance may be applied to an order. The amount will be refunded by money order anytime if requested. When catalogs are received early, usually bulbs may be received by regular mail in time to plant.

Canadian Customers. Apply to Sec. of Destructive Insect and Pest Act, Advisory Board, Ottawa, Ont. (or ask your P.M.) for Permit and mailing label and send these with your order.

Many **Latin American Countries** now have certain restrictions on importations. Usually it is only necessary to send us an official permit. Your postmaster can supply all information or tell you where to get it. Be sure to comply fully as we are not permitted to ship your order unless we comply with your law.

Errors. We make them but correct them, if notified at once.

Partial Shipments. If everything is not included in first shipment a slip so stating is enclosed. When final shipment is made, another slip so states. Check them with order and if short, notify us at once.

Guarantee. Our bulbs are true to name and healthy, but we do not guarantee results since we do not control the conditions under which they are grown. If, in your opinion, our bulbs are not up to our specifications, notify us at once. If you are not then satisfied with our explanation, they may be returned. No refund will be made if planted unless circumstances indicate bulbs were at fault.

Culture directions are in this catalog, hence none are sent with bulbs.

Catalogs. **Spring Catalog**, Jan. 15. **Fall Catalog**, Aug. 15. Names are dropped from our mailing list if you do not buy for two years. If not interested, please ask P.M. to return this catalog at our expense, thus saving paper, labor and postage.

It costs us around 25c per year to keep a name on our mailing list. This amounts to many thousand dollars for our list. We regretted very much that we had to drop about 15,000 names this year, of persons who had not

recently ordered. You can readily see these had already cost us over \$3,000. We will appreciate it if you will notify us if you do not wish to buy bulbs.

Price Lists. About once a year we issue Orchid Price List, Saintpaulia Price List and The Iris 400, a price list of higher priced Iris aristocrats. Applicants are also placed on these special mailing lists. If you really intend to buy from us, they are free. If you want them only for the valuable culture advice therein, please send 10c for each one wanted.

Correspondence. We enjoy your friendly letters. I answer them twice a year in our Introductory Letter. It is a fact that I work twelve hours a day or more and am still unable to answer all letters requiring it. Read entire catalog before asking questions.

We include in our catalog and price lists about everything necessary to success in the culture of the bulbs, orchids and plants that we list. Most of our letters of inquiry ask us to repeat information given therein. One of my greatest joys is helping people with their garden problems. That is why we put all this information in our catalogs, but it's getting along toward late afternoon for me and I can't write quite as many individual replies as I would like to do. But if necessary to consult me, make the reply easy. Where possible make it a questionnaire that I can answer yes or no. Enclose a self-addressed post card or envelope.

Many customers inquire if we have certain listed bulbs before sending even a very small order. Don't inquire please. Go ahead and order. I assure you that if we are sold out we will not send them but will inform you at once.

It is inevitable that if we must write a letter, your order will be delayed. It is better to write letters separately and not tied in with an order.

Identifying Bulbs. We usually can. Send flower, foliage and if possible a bulb. Give all facts known. Enclose self-addressed postcard and attach your letter to outside of package. We do not attempt to identify horticultural varieties of Gladiolus, Iris, etc.

Time of Delivery. All bulbs are delivered within range of correct planting dates. Delivery dates in catalog are sometimes only approximate.

If you like our catalogs, their friendly tone and information they always contain and wish to continue to receive them, it is necessary that you give us your orders. That is our only means of financing their publication. Sometimes we receive a contribution of \$1.00 to \$5.00 saying, "I don't need any bulbs, but keep sending the catalogs." We would rather sell you the bulbs. Since orders under \$1.00 are an expense to us and unprofitable, they are not counted as entitling the customer to remain on mailing list. We gladly send such orders if 15c extra is enclosed but they do not add to customer eligibility for catalogs.

GENERAL CULTURAL DIRECTIONS

Rich, sandy loam is the best soil. Only a few, like Bearded Iris, prefer heavy soil. A very few, like Gloriosas, must have sandy soil.

All soils require the addition of much humus. Compost all garbage, weeds, leaves, cut branches and manures. When rotted, add to soil and thoroly mix.

Fertilizers. We recommend only animal manures, compost and commercial fertilizers that are of organic origin such as Spoonit and others listed in this catalog for use on potted bulbs. In the outside garden fresh manure can be used on most plants, that are growing vigorously, as a very light mulch, but after flowering. Too much fertilizer before flowering time may almost or wholly stop the flowers. When the growth of a plant becomes abnormally rapid it is unlikely to flower or produce fruit. Your over-fertilized peach tree is likely to produce no fruit.

Do not fertilize a plant in dry soil, or use any fertilizer (unless thoroly rotted in a compost heap) in the soil before planting bulbs, seeds or plants. Water lawns, trees, and plants well the day before applying fertilizer and again a few days after application. Do not fertilize a sick plant in order to make it well. You are more likely to make it worse or even kill it. Small plants and seedlings should not have too much either. Lush, rapid growth may be weak and "flabby." Sturdy growth with firm structure is better. Chemical fertilizers are like "patent" medicines. They are stimulating but

often the final result is bad. The physical structure of soils is the most important thing. A well drained, friable soil is the best. Sand and humus can be added in sufficient quantities at least in flower beds and the humus can be added in fields by growing cover crops. For humus, add rotted manure, composted weeds, grasses and leaves, leaf mould or peat. It is seldom necessary to add any but organic materials to soils.

Compare plants with people. Both are living, organic beings. Air, water and food are necessary to their growth and health. But one does not give babies beefsteak, fried potatoes, apple pie and a cup of coffee. Nor is this a good diet for an invalid or an ill person, however good it may be for one in vigorous health who performs hard physical labor. Nor should plants be over fed nor fed at all if sick or thirsty. But since one cannot add much rich food when potting a bulb, very good results may be obtained by a monthly feeding of very weak liquid manure, color of very weak tea. A more convenient way is to use Spoonit, Plantabs or Vigoro tabs which we list under Garden Supplies. They are less messy.

After blooming, many neglect their bulbs. As a result the bulbs do not flower the following year. For success one must continue to give good culture. This is the time to fertilize, irrigate and cultivate frequently, until yellowing foliage indicates the bulb is becoming dormant. During this growth period next year's flower buds are formed.

Depth of planting and distance apart often cause too much concern. Bulbs usually have sufficient adaptability to do well under widely varying conditions. If left in one place a few years, most bulbs adjust themselves to their preferred depth. Approximately, bulbs should be about 2 or 3 times their diameter apart unless their habit of growth is spreading—like *Ranunculus*. In such cases plant farther apart. Bulbs as large as Daffodils may be 4" to 6" deep. Bulbs with a heavy erect stem need deep planting in order to remain erect. Plant deeper in light sandy soils than in heavy soils and in cold climates to protect them from frost.

Pests. Snails and slugs are serious pests and must be controlled in flower and vegetable garden. The best control is Bug-Geta Pellets. These may be broadcast while one must stoop to place a powder. They also help to control cut worms and grasshoppers. The 25 lb. bags are the most economical way to buy for a bad infestation. **Ants** are pests everywhere. They distribute aphids and mealy bug and tend them like domestic animals. Ant-B-Gon will kill entire colony. Quick temporary relief may be had in greenhouse and garden by use of a Chlordane dust, very poisonous. Keep it off of food plants and away from children and pets. Do not breathe the dust and clean up thoroly after applying it. It is also an excellent dusting powder on *Gladiolus* as a remedy for thrips. It also gets cut worms. **Mealy bugs** are universal pests and very destructive to plants. First, destroy all the ants and wash or clean them off of house or greenhouse plants. A bit of cotton twisted around end of a toothpick and then dipped in alcohol is a useful tool. In the garden, a spray of water from the hose will dislodge mealy bugs, aphids, etc. Mealy bugs and mites and sometimes Red Spider are serious pests on house or greenhouse plants. Any spray containing parathion or lindane will control these but they are so extremely poisonous that we do not list them or take the responsibility of giving directions for their use. They are unsafe for use in a living room. For plants in the house try N. N. O. R. It is safe, but less effective. For Scale use an oil base spray, preferably containing D.D.T. which you can add. Do not use oil sprays on orchids. Use only wettable or liquid D. D. T. Sprays.

See our listing of **Insecticides** under **Garden Supplies**.

If you do much garden work and end the day too tired, you owe it to yourself to use our light weight plastic and indestructible Resinite garden hose. See the listing. It is the most economical of all.

Acid and Alkaline soils. Most plants thrive in mildly acid, neutral or mildly alkaline soils. But others do not have so wide a range of tolerance. Rhododendrons, Azaleas, Camellias, Gardenias, Zantedeschias, Caladiums (and other members of Arum family), Nerines, Haemanthus, Gloxinias, Begonias, Orchids and most shade loving plants require an acid soil. Some like *Gladiolus*

prefer mildly acid to neutral soils; Bearded Iris do best in neutral to alkaline soils. The acid-alkali balance depends upon the concentration of hydrogen ions in a saturated solution. This is expressed in pH units. pH 7 is neutral. Below that the acidity increases; above it the alkalinity increases. For the mathematical, I will explain that the numeral is the negative logarithm denoting the concentration of hydrogen ions in gram atoms per liter.

To determine whether your soil is acid or alkaline, purchase for a few cents at your drug store a pad of litmus paper. Get both blue and red if available. Moisten the soil. Blue litmus paper is turned red by an acid soil. Red litmus paper is turned blue by an alkaline soil. The stronger acidity or alkalinity is shown by more rapid change of color and a deeper shade of color. If only one color paper is available moistened red litmus may be turned blue by holding it in the fumes of household ammonia. Turn blue litmus red by immersing in a very weak solution of any acid like white vinegar. Then dry. If you wish to know the degree of acidity or alkalinity—the pH of your soil—send us \$1.00 for a small Soil Testing Kit that any one can use.

Horticultural Peat, leaf mould (oak leaf mould is the best), or compost will help correct soils that are too alkaline. Good drainage will cause it to leach out.

Danish Peat. Any peat is difficult to get right now for some reason. Buy any horticultural peat locally if possible. Danish peat is one of the most acid but is quite lumpy. It is fine for basketing Laelias and other orchids. When used in soil it is better to soak a day or so then rub thru a coarse screen or break up lumps by hand. We prefer to break it up and make finer in texture also when used in potting Begonias, Gloxinias, etc.

Vitamin B1 is a useful, stimulating food for plants and reduces the shock of transplanting.

Please note our listing of these useful products under Garden Supplies.

Sources of More Information. Please note our garden Reference Books. Subscribe for **Popular Gardening**. The editor Paul Frese, former editor of Flower Grower, author of several books on gardening, lecturer and even more important, experienced gardener, is an accepted authority on garden problems. Send them 25c for latest copy or buy a copy on your news stand. Better still, take advantage of their introductory subscription rates of 12 issues for \$2.50 or 24 issues for \$4.00. Be sure to mention that you saw this offer in our catalog. Address, Popular Gardening, 90 State St., Albany, N. Y.

The old and popular **Flower Grower** now has a new editor and personnel. It is also recommended. Subscription \$3.00 per year. Flower Grower, 99 N. Broadway, Albany, New York.

Join your local garden club and be active in it. Tell your fellow members about our catalogs and price lists.

American Plant Life Society. Note mention of this under Amaryllidaceae. **The American Horticultural So.** publishes the National Horticultural Magazine, quarterly, which members receive. This beautifully printed and illustrated magazine covers entire field of horticulture. Send \$5.00 annual dues, to Am. Horticultural So., 821 Washington Loan and Trust Bldg., Washington 4, D. C. **The Midwest Hemerocallis So.**, send \$3.00 to Pearl Sherwood, Atlantic, Iowa. **North American Gladiolus Council**, send \$1.00 to A. Bazdorf, Lincoln Park, N. J.

POTTING DIRECTIONS

Bulbs bloom better in pots that are not too large. A 2½" Amaryllis will do well in a 6" or 7" pot. Many use a 5" size but I prefer to give as large a pot as will be favorable to flowering. Give larger or smaller bulbs of any sort, pots in proportion to this size, that is, 2 or 3 times the diam. of bulb. Small bulbs may be planted 2" or 3" apart in any size pot.

Most large bulbs, like Amaryllis, may have ⅔ of bulb above surface but small bulbs, especially Anemones and Ranunculus, should be covered about 1".

Use clean pots. It is advisable to boil and scrub the surface. Even new clay pots should be boiled, or soaked for two days to remove chemicals. Cover the hole at bottom with a piece of broken pot, concave side down. Above this place small pieces of broken pot and gravel. This helps to drain away excess

water. Over this drainage material we usually place a handful of sphagnum moss to prevent the soil from sifting into and clogging the drainage material.

The drainage must be perfect and it is essential that the soil above this drainage be of a friable texture that permits water to pass thru freely.

The best soil is a rich sandy loam with the addition of plenty of humus. For humus one can combine rotted leaf mould and old rotted dairy manure well broken up and rubbed thru a screen of smallest gauge. For most plants the proportion can be $\frac{2}{3}$ sandy loam, $\frac{1}{3}$ humus.

Fertilizers. Many advise the addition of fertilizer to potting soils. We never use any except the rotted dairy manure and leaf mould and sometimes a tablespoon of bone meal. If new roots come into contact with much fertilizer they are burned. Commercial fertilizer is especially a hazard. A potted dormant bulb, seed or plant must be babied to the extent of giving only a light diet. A rich, full meal will often cause failure. We prefer to get them well started and growing and of some size before adding more fertilizer, if any. The chief food of plants is carbon dioxide taken from the air thru the foliage. Water, nitrogen and minerals come from the soil.

When bulbs are well rooted, liquid fertilizer can be used once a month. Weak liquid manure is excellent but not quite as well balanced as Spoonit, Plant Tabs and Vigoro tablets, all of which we list.

For the starting temperatures and further culture of the plants please read "General Cultural Directions" and the culture advice given with the listings. Be sure to read both.

GARDEN REFERENCE BOOKS

Bailey's Cyclopedia of Horticulture. This 3-vol. set of over 3,600 pages describes almost every cultivated plant and has a wealth of culture information. On Orchids alone, this work is most valuable for its descriptions and culture instructions for almost every orchid in cultivation. The same is true for all types of bulbs, plants, shrubs or trees. Price \$37.50. This is the most monumental work in any language on the entire field of Horticulture. It is an ideal gift for a plant lover.

Hortus Second (Bailey). A Concise Dictionary of Gardening. This 778-page volume lists and describes nearly every plant offered in catalogs, and some that are not in the Cyclopedia of Hort. It contains only a few culture hints. Both works should be in every garden library. Price, \$7.50.

The above publications are subject to price changes, without notice by the publishers. In the case that prices again rise on these or any books listed here we will notify the customer. The customer may then accept or cancel order.

A Southern Garden, by Elizabeth Lawrence, a handbook for the Middle South. A most useful handbook for all gardeners, north or south. Bulbs and all garden plants. 251 pages. Price, \$3.00.

Enjoy Your House Plants. Excellent handbook of window gardening by Dorothy Jenkins and Helen Van Pelt Wilson, 238 pages. Price \$2.50.

Begonias And How To Grow Them. Bessie Raymond Buxton. Invaluable in growing all Begonias, including the Tuberous. 161 pp., \$3.00.

American Orchid Culture. Edward A. White. This is a complete handbook of American Orchid Culture for both commercial and amateur growers. Most interesting accounts of Orchid hunting trips, in many lands, are related. 14 beautiful color plates and many other illustrations. A beautiful, interesting, useful book. 276 pp., \$6.00.

Greenhouse Gardening For Everyone. Ernest Chabet. Important factors are noted including correct temperatures for forcing plants, bulbs and orchids. 266 pp., \$4.00.

Tuberous-Rooted Begonias and Their Culture. George Otten, veteran grower of Tuberous Begonias, with 60 years experience. An 88-page book, with 35 excellent illustrations. Price, \$2.00.

Bulbs For Beauty. Charles H. Mueller. 296 pages, illustrated. Experienced gardeners will gain new information about bulb culture from this book. Price \$3.50.

How to Grow Orchids. By Cecil Houdyshel. A 12-page pamphlet, no illustrations, carefully explains requirements of easily grown orchids. Price 25c.

The African Violet, Saintpaulia. Helen Van Pelt Wilson. The first and still

the best book on Saintpaulias. Revised and enlarged, by Helen Van Pelt Wilson. The revision includes all the better new varieties. Discusses all phases of culture and classification of types and varieties. Price, \$2.75.

The New Garden Encyclopedia. By a group of Horticultural Experts, edited by E. L. D. Seymour, a well known garden magazine editor and authority on gardening. This is a complete, practical guide for every detail of gardening. It gives pronunciations of plant names. 1380 pages, 10,000 articles, fully illustrated. Price, \$3.95.

Favorite Flowers in Color. Edited by Seymour. 634 pages of descriptions and 800 flowers are shown in full natural colors. Everything that flowers from trees, shrubs, to bulbs. One of the most beautifully illustrated flower books published. Price, \$5.95.

The books are cloth bound and printed on book paper. Postage prepaid. Add 5c for insurance to \$5.00. Sales tax 3% for California customers.

GARDEN SUPPLIES

Most of the following are mentioned in our **General Culture Directions** and are of use in the outdoor garden, window garden or greenhouse.

Bug-geta Pellets, 25 lb. bag, express f.o.b. La Verne, \$6.25.

Ant-B-Gon. Set 4 dispensers, filled, 75c f.o.b. Cheaper by mail. Ask your P.M. the cost of 2 lbs. from La Verne and send this amount extra. Liquid for refilling, 4 oz. 30c postpaid.

Garden Volc is a pure petroleum spray, effective for mites, mealy bugs, scale, red spider, white fly larvae, etc. Dilute with water to make 200 times its volume. It is also a good carrier for other insecticides like Black Leaf 40 used according to their own directions. Use small fly sprayer for house plants. Price, 4 oz. for 40c postpaid. For extensive use buy one gallon cans for \$2.85 f.o.b. La Verne. We will ship by express, or send postage for 10 lbs. if preferred by mail. Before using any spray it is best to learn first whether the plants are tolerant to that spray. If you do not find or know the information, try one plant, or even one side of a plant first.

Fertilizers. Use tablet form that can be pushed down on side of pots to gradually melt down. Can also be used on outside garden plants. **Plantabs**, small package 13c prepaid. Large package, 65c, prepaid. **Vigoro Plant Tablets.** Vigoro is a well known and approved fertilizer. Try this convenient form for your house plants. They are just as good too in the garden. Per package, 13c postpaid.

Spoonit is probably the best all around fertilizer for house plants. Equally good, of course, for garden plants. It is our own preference and the one we use on all potted plants in our greenhouses. It is also the most convenient and economical to use. The analysis shows 18% nitrogen, 18% phosphoric acid and 14% potash. To use, one dissolves a rounded tablespoonful in a gallon of water. Soak the soil with this once a month. A pinch of Spoonit in a pint size vase of water preserves and keeps cut flowers fresh for a longer time. Feed seedlings after transplanting with half strength solution the first time. In two weeks, begin monthly feeding with full strength solution. **Prices:** 7 oz. can, 50c, plus 6c for postage. 1½ lb. carton, \$1.00. 4 lb. carton, \$2.00. If wanted by mail, postpaid, add postage for 2 lbs. or 5 lbs. (since packing material adds weight) to remittance. Your postmaster will tell you the cost between your office and Los Angeles.

Horticultural Peat. We offer a good grade of fine Michigan peat, 12 lbs., express collect, for \$1.00.

Danish Peat is more acid than our domestic peat. Price, 6 lbs. for \$1.00. Postage extra. Ask your P.M. what zone Los Angeles (a suburb of La Verne) is in and send parcel post postage for 6 lbs. Per 100 lb. bale, \$8.50 f.o.b.

Sphagnum moss is very useful for lining wire baskets for hanging plants and has many other uses. It has an acid reaction and retains moisture, hence is valuable in the soil for acid loving plants. We handle the very best from Michigan. Price \$3.85 at our ranch. Please add 25c for packing charge on mail orders as we must repair bags when shipped. Weight 12 to 14 lbs. We ship by express, charges collect.

Rootone. One-half ounce for 50c, postpaid. 1-lb. can, \$5.00 plus postage if by mail.

Vitamin B-1, 100 tablets, 75c.

Directions for use, applying only to our own tablets. In transplanting bulbs or any plants, loose roots, dissolve 5 tablets in 1 gal. of water. Soak roots in this 15 to 30 min. Pour solution around plant when set. To stimulate growing plants, for the first application, dissolve one tab. in 2 gal. water. For succeeding waterings, use 1 tab. to 4 gal. water once a week. **Warning.** Do not soak dormant bulbs in Vit. B-1. It rots them.

Garden Hose are a prime necessity for gardens everywhere and for greenhouses. The most economical and the lightest weight hose is the **Airlite** brand of **Resinite Plastic hose**. The inside diameter of this hose is only $\frac{1}{2}$ " yet because the surface is mirror smooth and frictionless it delivers as much water as rubber hose of a larger diameter. Nothing can injure this hose except fire and very hot water and it is claimed to last forever. However, no one has yet lived long enough to prove this claim. It is not damaged by sun, weather, being run over by auto or truck. No chemicals affect it. It has no cotton to rot nor rubber to disintegrate with age. It is like Cleopatra, "Age cannot wither her." Price, 25 ft. length, which weighs less than 4 lbs., \$5.10 f.o.b. La Verne. Or by mail, postpaid zones 1 and 2, 35c extra. Zones 3 and 4, 45c extra. Zones 5 and 6, 55c extra. Zones 7 and 8, 75c extra.

Don't forget 3% sales tax due from California customers.

Wire Baskets. Our wire baskets are useful for growing many types of orchids and for all hanging basket plants. They are electrically welded, galvanized steel and polished to a silver brightness. The best obtainable. Prices: 8" 90c ea. or \$10.50 per doz. 10" for \$1.10 ea. or \$12.75 per doz. All are prepaid prices.

Snap On Pot Hangers, for hanging any size pot under trees, in lath house or greenhouse. Galvanized wire, non-rusting. 40c, \$4.50 per doz., postpaid.

Baffle Spray Fogger, No. 215A. For greenhouse, lath house or outside. Throws a fog spray 6 ft., increasing humidity and lowering temperature. Adjustable. Fits a $\frac{1}{2}$ " pipe. Price, \$1.36 (plus 4c tax in California). Send 30c extra if wanted by mail.

Hose End Fogger, No. 217 AB. Useful for spraying Orchids, Tub. Begonias, etc., and for damping the greenhouse to increase humidity. Price \$1.50 and 35c extra by mail.

Supplies do not take quantity rates as applied to bulbs. Thus a dozen of an item costs 12 times as much as one unless a dozen rate is quoted. If quoted at a dozen rate, one-half dozen would take the single rate.

BULBS AND ORCHIDS AS POT PLANTS

Bulbs and orchids are most desirable as pot plants. They may be grown in the living room, kitchen, a light basement or in a small greenhouse quite as well as in a large commercial greenhouse.

The following bulbs and plants are recommended for growing or forcing in pots.

Amaryllis Family: Agapanthus, Amarcrinum, Amaryllis, Clivias, Daffodils, Habranthus, Haemanthus (or Blood Lilies which include Katherinae, Coccineus, Albiflos, Carneus, etc.), Ismene, Nerine, Sprekelia, Tulbaghia, Zephyranthes, etc. Include Crinums if you have large space; **Iris Family:** Gladiolus nanus (Baby Glad), Dutch Iris, Freesia, Ixias, Sparaxis, Babiana, Tritonia, Marica, Moraea; **Lily Family:** most of the true lilies, Roman and Dutch Hyacinths, Muscari or Grape Hyacinths, Scilla, Ornithogalum, Veltheimia; **Oxalis Family:** both winter and summer growing species; **Arum or Calla Lily Family** includes White, Yellow and Pink Callas or Zantedeschias, botanically, the Black Calla, or Arum palaestinum, Fancy Leaf Caladiums (the most gorgeous pot plant in existence because every leaf is like a brilliant flower), Sauromatum venosum, Amorphophallus revieri; **The Gesneria Family** including Gloxinia, Achimenes and Saintpaulia; Orchids; Ranunculus and Anemones; Bromeliads or Pineapple Family including Billbergias.

All of these are listed, either in our spring or fall catalog. Nearly all our bulbs and plants may be grown in pots but there are a very few exceptions and these are indicated in the listing.

CATALOG ARRANGEMENT

is by Plant Families, according to their relationships.

In the following lists the **genus** (plu. genera) is mentioned first. After it, the **species** (plu. also species) or horticultural variety is named. The initial of the genus is used for the second and succeeding species. Thus A. will stand for Amaryllis or Agapanthus depending on the genus last named in full. When a person's name in parentheses follows a plant's name, that person is the botanical authority for the name.

THE AMARYLLIS FAMILY — Amaryllidaceae

This Family includes the following bulbs, Agapanthus thru The Alliae.

The American Plant Life Society was founded in 1934 as The American Amaryllis Society. The interests of the Society have recently been enlarged to include other bulbs and plants and the name changed but with no lessening in interest in Amaryllids.

The annual book, "**Herbertia**," is devoted to Amaryllids. It consists of about 250 pages, beautifully illustrated, on fine book paper, and is edited by Dr. Hamilton B. Traub of the U. S. Dept. of Agriculture, the greatest living authority on the Amaryllidaceae. Each member receives a copy.

The members also receive the occasional publication, "Plant Life," on other bulbs and plants.

Those who grow Amaryllis as an interesting and intellectual hobby and who love their vivid beauty, are invited to become members of the society. The annual dues are \$3.00 per year, which you may send to Mr. E. Frederick Smith, Sec., Box 2398, Stanford, Calif., or you may include this membership fee with your bulb order to me.

The society also publishes the following two books. These are bound in manila paper. These books will be of interest only to advanced collectors and students, those who understand scientific terms.

Amaryllidaceae: Tribe Amarylleae, by Traub and Moldenka. 18 illustrations, 194 pages. \$4.00. This is a systematic treatment of one of the main tribes of Amaryllids, in scientific language. The most important work on the taxonomy of Amarylleae since the publication of Baker's "The Amaryllideae," in 1888.

Descriptive catalog of Hemerocallis Clones, 1893-1948. By Norton, Stuntz and Ballard. This describes by means of key numbers all horticultural varieties and species of Daylilies.

These may be ordered direct from the secretary of the society, E. Frederick Smith, Dept. H, Box 2398, Stanford, Calif. He will be glad to receive your membership fee for the society or your renewal.

Amaryllid nomenclature. Carl Linnaeus, father of modern botany, made the first, rather complete scientific arrangement of plants according to relationships in the 18th century. His information about many plants was wholly inadequate to achieve perfection. Even in my later first French edition, 1798, nearly all American epiphytic orchids were placed in one genus, Epidendrums, and under the genus Amaryllis he included certain Crinum, Zephyranthes, Sprekelias, Brunsvigias, Nerines, etc. Botany is a progressive science and later explorations and discoveries have made possible many improvements in plant classifications and have required changes in nomenclature. Horticulturists are often loath to accept the new classifications and names. But we must do so even if inconvenient at first. It is not logical to continue an error.

In our catalogs, we accept changes in classification and names as made by recent writers in Herbertia. These have been approved by "Gentes Herbarum," the publication of the Bailey Hortorium of Cornell University. To help you avoid ordering a bulb you already have we give both old and new names, thus: Brunsvigia rosea (Amaryllis belladonna); Amaryllis advena, (Hippeastrum advenum).

Agapanthus means Love Flower. Blooms in spring and summer. Large attractive umbels, blue or white on tall erect stiff stems. Easy to grow in south in full sun or slight shade, any good soil, and in the north in tubs or buckets, wintered in basement. Delivery any time.

A. longispathus. New species. Flowers resemble *Orientalis* but blooms more profusely and is more graceful. 60c.

A. orientalis (umbellatus) Blue Lily of the Nile. Our variety is an especially fine one with deep blue flowers on a tall stem. Many flowers are produced in spring and thru summer. 75c.

A. orientalis, "Sky Blue." Lovely light blue. 75c ea.

Alstroemeria (pronounced -stre-, not -stro-). Very showy flowers, many in an umbel on a long, slender, stiff stem. The pastel tones are rich and varied, the form unique. Long lasting and popular as commercial cut flowers.

Culture. Good under drainage is essential, therefore plant if possible in sandy soil to which is added much leaf mould or other humus. On heavy soil add 6" sand equal or greater depth of leaf mould and spade to depth of 6" below original soil surface. Plant before Nov. 1 if possible. Altho native to semitropical climates *Alstroemeria* have been grown as far north as N. Jersey. When grown north of the border line of their hardiness they should be planted rather deep and earth mounded above, to be raked away when heavy freezing is past. A heavy mulch above this will also help as the tubers must not freeze. If one can get the tuber thru the first winter, they are usually safe thereafter but as tubers work downward it may require 2 or 3 winters to give one complete assurance of their safety, but we can't guarantee any degree of winter hardiness. Give *Alstroemerias* about 25% shade. They can be grown in 6" - 7" pots, of half very sandy loam, half thoroly rotted leaf mould, but drainage must be perfect. Dry them off when tops yellow normally.

Alstroemeria when long established become much larger and better and the tubers work downward to a depth of a foot or more. This makes them difficult to find and dig and renders this an expensive process. For this reason we have seldom dug our own but have bought young seedlings from a famous wholesale nursery, Las Positas. This nursery has now discontinued commercial growing. Because we must dig part of the following and because also of the increased scarcity and the larger size the prices of a few must be advanced. On those priced at 50c or more I suggest you buy only one and increase your stock by planting seed. They are so easy to grow that self sown seed have spread them in our gardens. Altho such gorgeous flowers, they choke out most of the weeds. This spreading is easily controlled by picking flowers or seed pods. Many order *Alstroemeria* as *Amaryllis*. They belong to the *Amaryllis* family, but are not the genus *Amaryllis*.

Alstroemeria chilensis. Most attractive pastel tones of white, pink, red, yellow and orange. 50c ea.

A. ligtu angustifolia. Flowers similar to *chilensis* but larger and on a taller, stiffer stem, often 3 ft. 50c ea.

A. ligtu Stinsoni. Like *angustifolia* but deeper colors. 75c ea.

These two varieties of *A. ligtu* are the most desirable of all and the best for production of commercial cut flowers. One can increase the stock by planting the freely produced seed. For pure seed, do not plant two varieties near together or the insects will cross pollinate them.

A. aurantiaca. Orange flowers. Altho other sorts can be moved early, this species can be moved only Dec. to April. Large divisions, 50c ea.

A. Assorted colors and varieties 25c ea. \$2.00 doz.

Amarcrinum Howardii (*Crinodonna Howardi* is the better name.) A cross between *Brunsvigia rosea* (*Amaryllis belladonna*) and *Crinum moorei*. Flowers are a pure pink and very attractive. It is a fall bloomer and should be ordered early. If not, it may skip blooming the present season. Invaluable as a pot plant or in outside garden in the south. \$2.50 ea. Larger bulbs, \$4.00 ea.

Amaryllis Linn. This genus as constructed by Linneaus was untenable because he included plants now known to belong to other genera. The invalid name *Hippeastrum* was used by both Herbert and Baker, but now we are scientifically correct when we use the name that has always been most popular. To the word "*Hippeastrum*," literally translated "horse star," we can now say "horse feathers" and forget the word.

Amaryllis are the easiest, the most showy and popular of all bulbs for growing in pots. Equally desirable for southern gardens where they are

hardy along the east coast to N. Car. and on the west to Vancouver. In the middle section they may be grown as far north as Ark. and Okla., but note special directions for colder sections.

How to Grow Amaryllis. In the garden, in the deep south where temperatures go only a few degrees under freezing, Amaryllis bulbs need to be covered only about an inch or two. Farther north they should be planted about an inch below frost penetration, in protected places and mulched with straw, leaves and/or brush. In Okla., a customer reports a depth of 4" with mulch is safe. Try our "Hardy Hybrids" and don't plant over about 6" deep to top of bulb. 4" deep is better.

We do not advise you to plant imported or greenhouse grown bulbs in the outside garden. They seldom last more than a year or two. These high-bred "hybrids" have been bred for the perfection of the flowers. Little or no attention has been given to sturdiness and vigor. They can be shifted to the garden for summer growth but they must be given special attention, watered frequently and fertilized carefully. Take them inside for the winter.

In Pots. A bulb 3" or less in diam. needs a 7" pot, and larger bulbs need larger pots. It is better to pot in Nov. or Dec. Better blooms result. But one can pot them as late as March and it is better late than never. The early potted bulbs will start more easily and give better flowers, but in either case the flowers will be better and will show more fully their full quality the second year.

The best potting soil is a rich sandy loam. If not sandy use a friable loam and add sand. To this add an equal quantity of well screened and well rotted dairy manure and leaf mould. Use no fresh or partially decayed manure. The use of peat or sphagnum of a very low pH should be moderate as Amaryllis do not like a too acid soil. Seedlings grow well in soil mixture containing sphagnum well broken up by rubbing. Many seedlings like more acidity than mature plants because they germinate in nature on or near the soil surface where humus is more abundant than at a depth where roots of mature plants penetrate. For the large bulbs one tablespoonful of bone meal to each pot is recommended. Mix all ingredients thoroly.

In potting the bulbs, carefully preserve any living roots, even remnants. Clean but do not scrape the base of the bulb and dust the moistened surface of base and the roots with Rootone. If there are no roots, coat base of bulb with Rootone, which will hasten their formation.

Pot the bulb two-thirds above surface and water enough to settle soil. After this keep the soil only slightly moist until growth starts, then gradually increase. When first potted set them in a cool, light room but not in sunlight. The best temperature now is not over 50°. The bulbs must have sufficient time to form a good root system under these conditions. If placed in a warm room and exposed to the sun, top growth will be made before roots, and the result may be poor flowers or none.

When you are sure that roots have formed, but not before, water the plants as directed with (or without) Vit. B-1. But be sure to leave the bulbs a sufficient length of time in a cool room. They need this period of dormancy and sufficient time to make a good root system. Many fail because they try to force bulbs before they have rested and have made good roots. If you get a poor flower it may be because the bulb had no roots and had only the sustenance stored in the bulb from which to make flowers. Lack of a good root system to nourish the flower will affect the quality of the flower in every way—size, substance and even color. So, don't remove pots from the cool room too soon. Wait until they demand it by top growth. Then bring the pots by easy stages to a temperature of 60°, then about 65°. Day time temp. should never be much over 70° for best blooming.

After flowering the bulb has shrunk and a long period of growth is necessary. If good growth is made at this important stage, the bulb will become much larger and offsets may be made. Keep them growing as long as possible. When the weather is warm outside the pots may be plunged in the garden. If rim of pot is sufficiently below soil surface the roots may emerge and add range to the root system. Or better still, shift the bulb and the unbroken lump of soil to the garden. Water liberally during growth and

when in good growth use manure water or mulch with manure. This is good advice for pot grown bulbs as well, but don't give heavy feeding to a sick or starved bulb. Plants, animals and people must have enough vigor to digest and assimilate food. If they do not have this, it becomes a poison.

Keep the bulbs growing as long as they will grow. When the foliage begins to yellow, about Nov. usually, one may reduce water, and give them a rest. Store pots in a cool room as for starting.

Usually the summer's growth will have increased the size of the bulbs sufficiently to require shifting to a larger pot. The new pot should be large enough to accommodate all the roots. Do not remove or injure any of the roots and contrive to distribute them thruout the soil.

When repotted, water at once to settle soil around the roots. Thereafter repeat the procedure followed when you planted the dry bulbs. But your bulbs are now much better bulbs. They are not dried out and they have or should have many roots. If kept too wet or too warm while dormant, the roots may rot. But if you handle the bulbs carefully you may expect more, larger and better flowers the second year. With experience you may become skillful in having flowers even by Jan. 1 and others up to May 1.

I am frequently asked why the inquirer's bulbs do not flower. Perhaps they have flowered the first year after their purchase but not thereafter. Some state their bulbs become smaller each year. These results inevitably follow wrong culture. Flowers in the spring are sure to result if good growth was made in the preceding period. If you have trouble in getting good growth in pots, be sure to try shifting to the garden after flowering.

There is no such thing as the Red Fire Disease of Amaryllis. Nor is it "ketching." The red pigment or rust results from decay of the Amaryllis tissue of any part of the plant. It is the normal reaction of the Amaryllis tissue to any injury or bruise and may be caused by one's shoes, garden tools, cut worms or other insect bites, sunburn or frost, cloddy or gravelly soil, too great acidity of the soil, contact with soil sulphur or chemical fertilizer, or even too much fresh manure. It often appears in a very mild form in stored bulbs as the result of decay or oxidation of the outer tunic of the bulb.

None of these things are of grave importance. Even a healthy man may sneeze.

But when a bulb is really sick the red rust is excessively produced and this symptom should not be overlooked.

Check on pot drainage, soil, and all conditions.

When a bulb is infested with narcissus fly, dig out the grubs and coat wounds with tree seal and replant. Do not treat Amaryllis wounds with sulphur. It is too acid and is therefore a poison.

Do not plant Amaryllis too close to trees or shrubs. They do not compete well with roots of such robust plants.

When they fail, many blame the bulbs, instead of their culture. It takes a wise person to say, "I failed," rather than, "the bulbs were not good." A good grower will be able to change poor bulbs into good bulbs in one season.

How to judge the quality of the flowers of Amaryllis hybrids. The perfect flower of the Leopoldi type should be 5" to 8" across. The petals should be well rounded and broad, overlapping each other, no twisting of petals, and they should form a wide open, flat flower. The texture should be smooth and firm, of good substance. The tube should be short. There should be little or no green in throat but the species Leopoldi contains considerable green. There are few hybrids that do not contain some green. Very few are perfect in every respect.

There should be no dull colors, like brick red. But colors should be bright and of every imaginable tone within the range of this genus.

Self colors are desirable to go along with stripes and other variations. But it is difficult to get other than red selfs and these are unusual. A few of our Select Strains, American Hybrids are pure red, scarlet, rose or pink selfs. But they are few and not separately labeled. Don't order self colors or any colors except as listed.

Please note. There is no quantity discount on Amaryllis except as noted with listing.

Amaryllis advena. Oxblood Lily. 5 to 8 ox-blood red flowers in an umbel, on a 10" slender scape, preceding foliage. Fall bloomer. **Culture.** Not suitable for pot culture, but so nearly hardy that in mild sections of north it will succeed. In Michigan, in the section where peaches are grown, this *Amaryllis* has been grown commercially. It may be planted 6" deep or more, and mulched, in a protected situation. Full sun exposure, heavy or medium loam soil is good but does well in lighter soils also. Order before September 15 if possible, or you may miss first year flowers. 60c ea. \$5.00 doz.

A. ambigua. The flowers have a long tube, like a lily. There are 5 or more on a very tall scape. The exquisite, spicy fragrance perfumes the entire garden. Customers report success with pot culture. Hardy in south. The bulb may be covered by 4" of soil. \$2.50.

A. immaculata. Usually known as *A. candida*. The long, tubular, lily-shaped flowers are pure white except that the tube may have a greenish tint. This might be valuable in breeding for pure whites, tho I am not sure that they flower as early as the hybrids. Another species in the same subgenus, *Macropodastrum*, *A. ambigua* is believed to be a natural hybrid between *A. elegans* (*solandriflora*) and *A. vittata*, subgenus *Lais*. The hybrid should be the seed parent for a shorter tube. \$4.00.

A. psitticina. Species from S. Brazil. Large bulb and plant. The large flowers are green tinted with carmine lines radiating to the carmine edge of petals. The effect is of a very pretty red and green *Amaryllis*. But the green here is attractive. Here this species flowers in winter and is a free bloomer. When well established in a pot this species will have foliage thru the winter. A cool house or room is best. Valuable in raising hybrids when seeking winter bloomers. \$7.50 each.

A. Sibyl Houdyshel. Withdrawn to increase stock. Please do not order this or any *Amaryllis* not listed in this catalog.

Amaryllis hybrids. In addition to the four species listed above, we offer the best field grown American strains. These include Howard and Smith, my own and other hybrids. We call them the Select Strains. These field grown bulbs are much easier to grow than imported, greenhouse grown bulbs. In order to produce the high quality *Amaryllis*, selected bulbs are grown in the greenhouse for one season. The flowers are hand pollinated. Thus there is more certainty of high quality than from seed collected at random in the field.

Color Classes. These are named from the parents. When they first bloom, off colors are removed or "rogued" out. They are again rogued the second year. Nevertheless, the color classes are only approximately correct. Many off colors are missed when rogueing. There is also a wide difference in opinion as to color. One calls a flower pink. Others may call it rose. Therefore, we do not guarantee the color but we do exchange them if the customer is not satisfied. Seldom, however, is a customer willing to part with a bulb of this strain, even tho it be an off color. The following color classes are as selected and named by the originator. When you get a wrong color and do not wish to keep it, notify us at once and await instructions.

Select Strains, Assorted Colors. 2½" diam., up. 90c ea. 3 for \$2.50. \$9.00 doz.

Select Strains, Near White. These have less color markings than the White Background. When their seed is planted, we have found a few pure whites of high quality and usually larger than the pure whites that we have imported. The color markings are variable. Some are very close to pure white and none have heavy markings. 2½" up, \$3.00. Three for \$8.00.

Select Strains, Crimson Shades, 2½" up, \$1.00, 3 for \$2.75. \$10.00 per doz.

Select Strains, Red Shades, 2½" up, \$1.00, 3 for \$2.75. \$10.00 per doz.

Select Strains, Scarlet Shades, 2½" up, \$1.00, 3 for \$2.75. \$10.00 per doz.

Select Strains, White Background. We have marked about 100 large bulbs in our field that are this color. The general effect is of a white flower but all have markings in variable degree. These are larger bulbs than the above and will usually give 2 or 3 scapes of flowers. 3"-3¼" diam., \$2.25, 3 for \$6.50. 3¼" diam. up, \$3.00.

Select Strains, Assorted Colors, large sizes, 3-3¼", \$1.45, 3 for \$4.10. 3¼" up, \$2.00 ea.

Houdyshel's Hardy Hybrids. These are not hardy outdoors in the colder northern states but as far north as North Carolina, Washington, D. C., Oklahoma and even So. Kansas these have proven winter hardy if covered by 4" or 5" of soil and given a good winter mulch of straw. Possibly with a pile of brush above the straw they might be wintered in the garden farther north.

This is an extremely vigorous, rapid growing and multiplying strain and equally prolific with flowers. Most of them are similar in color, orange scarlet with white throat and green keel. An ideal strain for outside planting and landscape effects. Their bright vivid color "hits you in the eye." Altho not an exhibition type, many will like them in pots, where they are easier to grow than the more aristocratic hybrids, and their bright cheerful colors in Feb. and March will be most welcome. Price 75c ea. \$7.50 per doz. \$50.00 per 100, prepaid.

Amaryllis Seed. We again offer seed of our Select Strains Amaryllis. In one package of seed you are very likely to get all the colors that we list. There are bound to be some that will be excellent self colors, worth a few dollars per bulb tho you might not get one in a 50c package. Price 50c for 50 seed. 200 seed for \$1.75. Field grown seed.

Plant the seed as soon as possible while fresh. Altho we get good reports of germination when planted in late winter or spring, more will grow if planted in early fall. Use good rich sandy loam, containing much humus. Seed may be close enough to overlap a little. Cover seed about $\frac{1}{2}$ ". Seedlings may be grown in pots in house or greenhouse where they will continue to grow all year without a dormant interval until they flower. Usually this requires 2 to 3 years. In the warm south they can be grown outside under the half shade of lath. But frost usually destroys foliage in winter and cool nights interrupt growth, slowing development.

Brunsvigia rosea (Sym. Amaryllis belladonna, Aitson). Familiar in Calif. and the south as Amaryllis belladonna, Naked Lady Lily, etc. It is hardy where minimum winter temperatures are about 10° above zero. It will be safe to plant it on the east coast to N. Car. and to Washington, D. C.; thruout the south where winters are mild; on the Pacific Coast to Vancouver. They do not succeed in pot culture.

The many flowered umbels are of the most exquisite pink and the most entrancing fragrance. Only in the rose and the Belladonna Lily does nature assemble these two qualities in one flower in such perfection.

Brunsvigia rosea major. Earliest to flower and largest. Fragrant, pure pink flowers. A favorite florist item. L. 50c.

B. rosea, var. Parkeri. This is a larger flowered and deeper rose form. A great improvement on the type form. Special price, \$1.50 ea.

B. rosea, var. Hathor. This is a pure white Belladonna Lily and is very rare and most beautiful. Price \$5.00 per bulb.

Clivias. Altho easy to grow and to flower by the amateur they will always be classed with the aristocrats of flowering bulbs, because the flowers easily place them there. They increase so slowly by division that the chief method must be thru the freely produced seeds. But Clivias require at least five years and usually seven, to flower from seeds. This time involves expense. They can never become very cheap.

Clivias have evergreen, strap-like foliage somewhat resembling that of Amaryllis. The flowers are produced in umbels of 10 to 25, in rich and exquisite tones of orange, in March and April. When not in flower the deep rich green foliage and later the red fruits are most ornamental.

Culture. They are usually grown in pots, even in the south, as more perfect foliage is thus possible, and when in flower one wants them in the house. We grow them in a lath house, lath spaced $\frac{1}{2}$ " apart, and in garden under Avocado (evergreen) trees, directly in the soil as they are often grown in Calif. When grown thus they will make very large clumps. They must have shade with only a few flecks of sunshine, but plenty of light and air.

Clivias must never be dried off or allowed to lose their foliage. Keep them well watered after flowering, all summer and fall. Liquid fertilizer occasionally helps. When growth ceases in late fall rest them by giving them less water. But keep moist enough to prevent wilting of foliage. At this time

they should have a cool room with temperatures from above 32° to not much over 50°. Pots should be 8" for a small plant up to 12" for larger. As they grow and increase, do not divide but shift to larger pots. Drainage must be perfect. Potting soil is described under "General Culture Directions." pH7 is about right. One cannot guarantee a Clivia to flower the first year after moving tho they usually do.

The foliage of our Clivias, grown outside in the ground, will not be as perfect as that of pot grown plants. But when potted, they replace the old foliage in a few months and become specimen plants.

Clivia miniata. Wide open flowers of soft yellow orange. Hardest. \$2.75.

C. miniata hybrids. Similar to the species "miniata" in foliage, hardness, wide open flowers, etc., but there is some variation in color and form of flower. Most of them are in light orange tones. A few are dark and a few have a white throat. Do not express your color preference for any Clivia hybrids as we cannot tell the color from the plant. We lost so many of this type in the freeze of Jan. '49, in a lath house, while those outside under trees were undamaged, that we are discontinuing the lath house culture and are closing out these plants. Those not killed have recovered fully from the freeze damage. We have probably 50 that are about blooming size. Price \$3.00 ea. Very small plants for as low as 50c. Others 75c, \$1.00, \$1.50 and \$2.00. The latter should flower in 1952. You will be surprised by their rapid growth in pots, under good culture.

C. nobilis hybrids. As shown by their wider and less tapering foliage, by their darker orange flowers, these probably have the species Nobilis in their ancestry. They do not, however, have the curved perianth of Nobilis and the flowers are almost as wide open and flat as miniata. They have the largest flowers and the finest colors in Clivias. Our former prices were as high as \$10.00 to \$12.00 ea. Now we can offer fine plants for \$5.00 ea., and entire clumps with two or more plants for \$10.00.

C. cyrtanthiflora. The flowers have a long narrow tube, like Nobilis and are pendulous. As there are 30 to 40 flowers in an umbel the floral display is very attractive. An outstanding feature is that flowers are produced, now and then in our large clump from early summer into late fall. Hybrid between Nobilis and Miniata. Probably no other American catalog can list this as it is extremely rare here. Price \$15.00.

Daffodils and Narcissus belong to the Genus, Narcissus of the Amaryllis Family.

Culture. All Daffodils except the Polyanthus Narcissus are hardy both in the mild climate of the south as well as in the colder northern states. In the north especially it is best to plant the bulbs rather deep where the frost does not reach. Six inches is about right. Smaller bulbs may go more shallow and be mulched. In California too and all the south there is an advantage in deep planting. Plant September to November.

Sandy loam is the best soil, but any good rich garden soil will do. Use no fresh manure. The addition of lime to the soil is good, especially if leaf mould is used in sandy soils.

Trumpet Daffodils do not succeed well in the tropics. They should not be planted in So. Florida. Polyanthus Narcissus are too tender for the north but are said to do well as far north as S. Carolina on the Atlantic Coast. But in the north they are fine pot plants and often flower before Jan. 1.

King Alfred, the most popular of Trumpet Daffodils. The large flowers are of deepest golden yellow. The large, frilled trumpet adds to the beauty of the flower. We can sell you a dozen bulbs this year, medium sized rounds, for less than you would pay your florist for a dozen flowers next spring. 15c ea., \$1.40 per doz. Per 100, \$8.00 by express, f.o.b. Large round bulbs, usually giving 2 or 3 flowers, 25c ea. \$2.50 per doz. Per 100, \$12.50 by express, f.o.b.

Polyanthus Narcissus, Paper White. The pure white flowers often come by December or even before. They are very useful for cutting. One larger bulb 25c. One dozen assorted blooming sizes, \$1.00.

Eucharis amazonica (or Grandiflora). Eucharist Lily. Star of Bethlehem. First collected on banks of Rio Magdalena, Colombia, S. A. Thus are combined

three Biblical names in the lore of this flower. There are 4 pure white, very fragrant flowers in an umbel, with a cup in center as in daffodils and ismenes. The beautiful evergreen foliage makes this always a decorative plant. Flowers are used in corsages and bouquets and are more rare than orchids, often more expensive.

Culture. It is recommended that bulbs be potted in coarse, fibrous loam with coarse sand, granular charcoal, a tablespoonful of bone meal, some peat and a little rotted, fine cow manure. Because they need abundance of water when blooming, the drainage material must be sufficient in quantity and perfect in performance. Feed with manure water except when resting. Shaded, but some sun is needed to develop flowers. After flowering, give only enough water to maintain foliage and full shade for several weeks. Then gradually increase water and light exposure. If you proceed correctly they flower again. From two to four crops of flowers per year may be had. They are strictly greenhouse or warm room plants and a night temperature of 65° is best. You can grow them with Cattleyas and Saintpaulias. We offer the largest and best bulbs obtainable for \$1.50 ea.

Haemanthus. This south African genus is very rare in cultivation. Very few have ever seen one. They are hardy only in an almost frost-free climate like So. Calif. or Florida. In their habitat, the following grow in cool, moist forest glades where there is little sun but plenty of light and where breezes keep the air in motion. These are the famous and rare Blood Lilies of South Africa. Four species are listed here. Others are now thru flowering and will be listed next spring.

Culture. They can be grown in the outside garden only where temperatures do not go below about 24° altho we lost only a few at 20°, due perhaps to protection of the trees. They do well anywhere in pots. The soil should be a very sandy loam containing abundance of humus. Add some coarse sand to improve drainage. *Katherinae* and *Coccineus* should be just under soil surface and *Albiflos* should be one-half or more above surface.

Haemanthus are not cheap bulbs, but they are good investments as they seed freely if pollinated and seed are easily grown to flowering sized bulbs. To pollinate the flowers, cup your hand and move palm gently over the flowers, daily. Thus the pollen is carried to the pistils and seed is produced. The seed may be planted on the surface of a soil of sandy loam and peat with a little sphagnum on top. Press them down into the soil a little and see that the radicle penetrates the soil.

Haemanthus Katherinae. The bright red flowers fill a large rounded umbel often 10" or more in diameter. I have counted nearly 125 in an umbel. The broad banana-like foliage droops gracefully into an umbrella form. Scarlet seeds follow the flowers. A plant in flower is an unforgettable sight of tropic beauty. The entire plant is of quite large proportions, the foliage and flower umbel reaching a height of 30" to 36". Introduced from Natal in 1877, they are yet very rare. Give them a large pot, about 12". Plant with top of bulb at soil surface.

Katherinae is almost evergreen but usually tops either die or decline in January. About that time, the neck splits due to pressure of new growth. We can usually deliver from Jan. until late March but early ordering is advisable. We usually delay shipment by mail to north when there is danger of freezing. Express is always safe. *Katherinae* should never be entirely dried off but less water is needed when resting. Jan. - Feb. delivery. Price, good flowering size, \$5.00. Order well in advance as we sell out early.

H. albiflos. Two or more rather stiff erect evergreen leaves. The small white flowers, 100 or more, are in a dense umbel. A rare and unusual plant. It is evergreen and must never be dried off. But most growth is made in summer and more water is needed then. Flowers here in late fall. Leaves burn badly in sun. \$3.00.

H. coccineus. This is the true Blood Lily altho all *Haemanthus* are referred to as Blood Lilies even tho one has white and another flesh pink flowers. This very rare Amaryllid usually has only two semi-erect leaves. They grow all winter, after which they should be entirely dry until about Aug. Then watered only a little at first. The flower scape appears, preceding

foliage. This scape furnishes part of the floral display, being marked by contrasting red spots on a bright background. The 4" umbel consists of very numerous small, densely placed blood red flowers. These are followed by the fruits which turn red upon ripening. Each fruit will contain one or more large seeds. In the south plant the bulbs with top even with soil surface. Half shade. Easy in pots where half of bulb may be above the soil. Stock limited and rare. As they flower very early, unless you order in early Sept. at the latest, the bulbs are likely to have flowered in storage. If bulbs have flowered we will deliver anyway unless you specify that we may only send a bulb that has not yet flowered. It is not a bad idea to get a bulb when you are able. Price \$3.00. Larger bulbs, \$3.50.

H. natalensis. This is perhaps the rarest of all we list. The plant is similar in appearance to Katherinae but the flowers are entirely different. The umbel is very dense and about 3" to 4" across, a rich scarlet in color. The scale leaves at the base of stem are richly colored and spotted, adding to attractiveness of plant. This is truly a fine "Blood Lily." If the flowers are pollinated seed will be borne and are easy to grow on. Altho we have grown these for 10 years we have not before listed them and we offer you a very low introductory price, \$4.00 per bulb. Smaller, \$2.50. Delivery Nov. to Jan.

Culture. H. natalensis are hardy here if covered by 4" of soil. They are protected by surrounding trees but temperatures in unprotected places have been as low as 24° and bulbs were not harmed. Planted thus they do not start growth until warm spring weather arrives and so far we have never had flowers by this method. Recently we have dug the bulbs in late fall when the top dies down. They are then allowed a few weeks rest and are potted in 8" pots. We use sandy loam with some added sand, leaf mould and peat as an acid soil is needed. They are watered to settle the soil. The bulbs are barely covered by soil. They may be grown in a warm room in the house or in a greenhouse. We fertilized with Spoonit. They flowered about Feb.

In warmer sections they would probably flower outside but for nearly all this will be for growing in pots.

Hemerocallis. Daylily. The flowers range in color from dark bronzy red, thru pastel tones of pink to orange and yellow. They are borne on a branching scape well above the foliage.

The Greek name, meaning "beautiful for a day," refers to an individual flower. But these are so freely produced, thru a long period, that "beautiful every day" would be more apt, as a collection of several sorts shows masses of flowers thruout the spring, summer and fall and here we often have some winter flowers. The modern sobriquet of "The Perennial Supreme" is well deserved.

Culture. While their beauty is their greatest recommendation, their easy culture and hardiness add to their desirability. I have known abandoned plants here, where we have arid, hot summers, to persist for years. They grow well in full sun. Slight shade is better. If given constant moisture about their roots, preserving this and coolness of the earth with a good mulch, the plants are ideally situated and respond with generosity. They are hardy even in severe winters in the north. They are fibrous rooted, not bulbs, and must be planted at once when received. Altho they can be moved any time, it is better to ship from late fall to early spring.

They are an almost perfect border or landscape plant, never have to be dug and replanted. All that you must do for them is keep the weeds down and water. A heavy leafy mulch helps every way.

In Daylilies, the sepals are colored and petal-like and are an essential part of the floral display. Early fall is an excellent time to plant.

Hemerocallis Araby. A lovely pastel color, with the effect of bronze on gold dust. 30". Blooms early. 75c.

H. Bagdad. Coppery red over orange veins. Mid-zone of madder brown. Very striking large flowers. 3 ft. June-July. 50c.

H. Bijou. 24". June-July. Orange, overcast with rich fulvous red. 50c.

H. Calypso. Large, fragrant lemon yellow flowers. Opens in evening. 42". June - August. 30c ea.

H. Cecil Houdyshel. A Dr. Traub origination. A deep crimson with an old

copper shade that makes it outstanding in our garden. Slight shade gives better color to flowers. 3 ft. June - July. \$1.00.

H. Chengtu. Brilliant coppery orange-red with carmine mid-zone. 3 ft. July - Sept. 50c.

H. Cinnabar. Cinnamon sprinkled over orange, gold-glistening. 30". July - Aug. 50c.

H. Crown Prince. Color like Mikado. 30". June - Aug. 25c ea. Per doz. \$2.25.

H. Dauntless. Cadmium yellow. Fulvous red blended in mid-zone. Pastel effect. 30". June - Aug. 75c.

H. E. A. Bowles. 48". Large ruffled flowers of deep red-orange blended with gold. Early. 75c.

H. Evangeline. 40". Large rosy flowers with wine purple eye zone. Early. \$1.50.

H. Florham. Still popular old hybrid. Large, golden yellow. May - July. 50c.

H. Florida. Pastel shades. Light chrome yellow with rose blush. Darker mid-zone. July - Aug. \$1.50.

H. Fragrance. A fine deep yellow. Fragrant. \$1.00.

H. Iris Perry. 36". July - Sept. Orange-bronze. 50c.

H. Kanapaha. 36". Clear cardinal red. The best red that I have seen. June - July. \$6.00.

H. Kwanso. The Double Orange Daylily. 25c ea. 3 for 50c.

H. Linda. Petals, ruffled golden yellow, flecked with cinnamon, and a rose zone. Sepals, pure yellow. Very lovely. June - July. 50c.

H. Mandarin. 48". Lemon yellow. June - July. 50c.

H. Margaret Perry. Brilliant orange-scarlet. 4 ft. July - Aug. 35c.

H. Mikado. Orange with mahogany-red zone. A favorite. 3 ft. May - July. 35c.

H. Modesty. 36". Large, pale creamy yellow. Our nearest to white. 75c.

H. Nubiana. Dark chocolate-red with yellow stripe in petals. One of the darkest varieties. 2 ft. 60c.

H. Old Vintage. 54". Wine-purple with yellow throat. Ruffled petals. Very profuse. April - May. \$1.00.

H. Patricia. Pale yellow. Large fragrant flowers. 30". July - Aug. 50c.

H. Purple Waters. 36". Wine-purple with ruffled petals. May - June. \$1.50.

H. Radiant. Rich orange. 42". June - July. 50c.

H. Rajah. Deep English red with darker red veins. Garnet red eye-zone. 40". July - Aug. 75c.

H. Rosita. Near carmine-crimson with coppery red tone. 36". Part shade preferred. \$1.00.

H. Serenade. Rose-fulvous markings on apricot cream. Faintly overcast darker 4 ft. June - July. 75c.

H. Sibyl. Dark purple-red petals, lighter sepals. \$2.00.

H. Soudan. Lemon yellow. Broad wavy petals and sepals. 3 ft. June - July. 50c.

H. Vesta. Deep orange with glistening gold sheen. 30". May - July. 50c.

H. Vulcan. Dark maroon-red. 30". July - Aug. \$1.00.

H. Wau Bun. Large apricot flowers, sprinkled fulvous red. The twisted and curved petals add to its beauty. 75c.

Leucojum aestivum. Snow Flakes. Hardy in north. Blooms often before snow is gone. Dainty white flowers, each petal with a vivid green dot. Plant 4" to 6" deep. Do well in full sun, a little better in half shade. 15c each. \$1.00 doz.

Lycoris are natives of Japan and China. They are among our very best bulbs for the south and two at least, *L. squamigera* and *L. purpurea*, are quite hardy in the north. This is because the bulbs remain dormant until very late winter or early spring when the foliage appears, makes rapid growth and dies back by early summer. Most other species are winter growers and that eliminates them for northern gardens. Cover the bulbs by about 4" of soil in full sun exposure. Leaf mould or peat added to soil is a help. Lycoris are recommended by many for pot culture. If one gives them a very cool room—not a "hot house"—they should succeed. Imitate Calif. winter climate, where temperatures in winter range from 32° to 60°. Most of them are hardy to

Washington, D. C., and even in So. Kansas a few grow them in protected places.

Lycoris purpurea. We have almost decided that we have been listing this under the wrong name. It apparently agrees with the illustration and description L. Sprengeri, on pp. 170 and 171 of "Amaryllidaceae: Tribe Amaryllaeae" by Traub and Moldenke. The flowers are rose, purple and carmine with the outer third of the petal, in stunning contrast, a vivid prussian blue. Best of all, it is winter hardy in the north. Flowers later than L. squamigera, in the fall, but recently moved bulbs frequently fail to flower the first year. It is worth waiting a year to see, but some will flower this fall if planted in Sept. Rare. \$3.00 ea.

L. radiata. Red Spider Lily. Coral red flowers in a several flowered umbel in Sept. Flowers are followed by the foliage. Flowers have narrow undulate petals and long stamens which give the "spidery" appearance. This is a common flower in the south and one of our most beautiful. Hardy along coast to N. Car. and on west coast to Vancouver. 35c ea. Larger forcing size, 50c.

L. squamigera. Amaryllis Halli. The hardy Amaryllis that resembles Brunsvigia rosea (Amaryllis belladonna). \$1.00 ea.

Nerine. This genus is seldom seen in America, altho it is one of the most beautiful and varied of the Amaryllids. They bloom in succession from Aug. 1 thru January. They are hardy only in the south where temperatures seldom go under 26°. But they are one of the finest pot bulbs. **Culture.** Pot or plant in mildly acid to neutral soil. Sandy soils are more likely to be acid and drainage is better. Use peat or leaf mould to bring soil to pH 6.5 or 7. Alkaline soil is the most frequent cause of failure. Pot bulbs at once with bulb well covered and 2" to 4" deep in gardens. Full sun. When foliage yellows withhold water.

Nerine Bowdenii. 10 or more flowers in an umbel 9" wide on a 15" scape. One of the finest Nerines and very easy. \$1.00 and \$1.50 ea.

N. filifolia. The bulbs are very small, only ½" diam. Round, grassy foliage. Very pretty flowers in an umbel, pink, wavy or crinkled petals on a 10" scape. Our stock is so reduced we could not list last spring and almost reluctantly we decided to list this fall. So we offer only for early orders because if you want to get a flower you must order before Sept. 15. Earlier if possible. If ordered too late for flowers you will still get good increase of bulbs and there is no assurance that a bulb moved now will flower this fall but often they do. 25c ea. \$2.50 doz.

N. Fothergilli. Its full name is Nerine curvifolia, var. Fothergilli major, which is too long. It is usually shortened to the name we list. It is so outstanding and beautiful that it deserves sufficient attention to give the full name. The flowers are a rich red or scarlet that is iridescent in a way to remind one of polished gold stone. This and the following hybrid bloom in late summer or early fall just preceding the appearance of foliage. This follows a period of a summer dormant period when they must be kept dry. The two varieties are ideal for potting and do not need to be repotted for several years. In pots cover the bulbs only to the neck. Keep bulbs growing at a cool temperature all winter and spring until foliage yellows. \$2.50 ea.

N. Fothergilli hybrids. Much like the parent but colors are from salmon orange to shades of red. No choice of shades possible. These like their seed parent, N. Fothergilli, should be kept dry in summer when dormant. Water in Sept. \$2.00.

N. lucida. The large bulb produces leaves a foot long with the flowers in July. The 10" scape bears a large umbel of about 25 flowers, about 2" wide. Baker describes flowers as pale red. Delivery Nov. \$2.00 ea.

N. massonorum. Earliest, often mid-July. Foliage like N. filifolia. Flowers resemble it but smaller, on a shorter scape. Very long spathe. Delivery any time. 35c each.

N. rosea-crispa. Hybrid of Filifolia but larger in all parts. Can be kept evergreen or dried off. \$1.00 each.

Pancratium maritimum. Because flowers resemble Ismene this is sometimes called Peruvian Daffodil, the common name for Ismene. The flowers have a daffodil-like cup, pure white and very fragrant. Evergreen foliage.

Can be moved any time. Hardy only in south. 50c ea.

Sprekelia formossissima superba. Orchid amaryllis. Deep crimson flowers in orchid-like form. Much larger than common type, better color, more flowers. Evergreen. Fine in pots. Culture like Amaryllis. 50c and 75c.

Tulbaghia violaceae. Small cousin to Agapanthus. Mauve flowers produced thruout the year, a true ever-bloomer. Foliage has garlic odor if bruised. An acquisition for pot culture. 25c ea. 5 for \$1.00. \$2.00 per doz.

T. fragrans. This much larger species has a large, true bulb, with glaucous green foliage, 18" long and 1" wide. It has no allium odor. The plant is a profuse winter bloomer in a cool room, with a few flowers in summer. It has larger fragrant flowers than violaceae, in the same color. Evergreen. Since it increases rapidly the bulbs are a good investment for dealers or for plant exchanging. \$2.00.

Zephyranthes. Fairy lilies. Smallest amaryllids, 6" to 12" tall. They make lovely borders or beds that will look like a colored rug when blooming. Hardy in middle south, easy in pots in north. Give acid soil, sandy loam with peat or leaf mould, full sun or half shade. Most of them bear seed freely (except grandiflora) and can be propagated rapidly that way or crossed to produce hybrids.

Zephyranthes grandiflora. The largest Zephyranthes. Large pink flowers. Very easy in pots or garden. In the north it can be planted outside in early spring and dug and stored over winter like Glads. In the south, its habit of flowering after a rain gives it the name of Pink Rain Lily. Small 15c. L. 25c. Assorted sizes, \$10.00 per 100.

Z. candida. Pure white flowers, evergreen foliage. Late summer bloomer. We have only small bulbs at 15c or \$1.00 doz.

Z. insularum. White flowers in late summer. Might be useful to cross with candida. This new species is very rare in cultivation and I can let you have only one for 75c.

The **Alliae**, or onions, are now included in the Amaryllis Family. The following Alliums are useful as foods as well as ornamental. Culture simple.

Allium schoenoprasum. True Chives. Small clumps, 10c, 3 for 25c.

A. tuberosum. Japanese Garlic. Deliciously flavored leaves. Evergreen and probably not hardy in north. 25c.

A. ampeloprasum. Spanish Garlic or Burbank's Garlic. This is the largest, sweetest, juiciest garlic and the easiest to peel. It has a 30" flower scape with a large round umbel of white flowers. An ornament in the herb garden. Rapid multiplier. 10c ea., 75c doz.

The following are purely ornamental Alliae, not edible.

A. triquetrum. A fine white Allium for pots or shade garden. Being a winter grower it is not hardy in the upper north. Prefers shade. 10c. 4 for 25c. 60c doz.

Brodiaea uniflora. Lovely porcelain blue flowers on a low plant. Usually grown in pots in north but a customer reported them hardy in Ohio. 6 bulbs in a 4" pot will go well with Oxalis in your kitchen window garden. Must have a cool room. 6 bulbs for 25c. 45c doz.

BULBS AND ORCHIDS AS PRESENTS

For Christmas, Mother's Day, birthday, anniversary or for shut-ins and hospital patients they are ideal presents. Christmas crowds are not enjoyed by most people. If you shop by mail for bulbs or plants, you save gasoline, time, worry and headaches. You save money too for while most all gift items, jewelry, books, magazine subscriptions, and toilet articles have risen in cost, bulbs, orchids, African Violets, cut flowers are actually lower in price. For books, give garden books.

IRIS FAMILY — Iridaceae

The Iris is the type genus of this family, which includes Iris, Gladiolus, Watsonias, Freesias, Sparaxis, Tritonias, Babianas, etc., listed on the following pages.

Tall Bearded Iris. A garden is not complete without a good collection of

the newer varieties of bearded Iris. Our grandparents loved them and grew quantities even tho they had only blue and white and these were very inferior to the present tall, large flowered Iris in blue, white, yellow, red, pink and blends of all kinds and combinations. Bearded Iris are wonderful cut flowers if you grow them yourself, but the flowers are too fragile to be handled by the shops.

These can be planted late into the fall but should be planted as early as possible. Our Spring Catalog lists the lower priced but better modern Iris. Our price list, "The Iris 400," lists the aristocrats at 35c to \$15.00 ea. We have only a few available Spring Catalogs and Price Lists. Both are valuable for culture advice and descriptions. Price 10c ea. Refunded on your next order for Iris.

Dutch Iris. These are bulbous Iris. The flowers are not fragile like bearded Iris and they are therefore very useful for cutting.

Culture. They should be planted in the fall before Oct. 30 as the bulbs often deteriorate after that date. Later plantings may succeed if bulbs are good and not infested with plant lice. Plant 1" to 3" apart and 3" to 4" deep depending on size of bulbs. They are hardy in milder sections of north but a mulch is advisable. Full sun or slight shade.

Some varieties flower from much smaller bulbs and never make as large bulbs as others, therefore no definite size is specified but all are flowering sized bulbs. We are lowering prices where possible.

Imperator. The best tall, dark blue. 2 for 15c. 80c doz.

Yellow Queen. The most popular, deep golden yellow. 2 for 15c. 65c doz.

Assorted Varieties. Most colors are in this mixture and many that are not listed above. 2 for 15c. 75c doz.

Iris Spuria have tall stems, often 3 or 4 ft. They are very attractive in the garden and make excellent cut flowers. Each spike develops 2 or 3 flowers in succession. These may be used in arrangements or in any sort of floral construction. The flowers are often used in corsages. Iris spuria are a regular flower market item and in excellent demand by florists. Calif. ships them east where they could grow their own—but later. **Culture.** Set the rhizomes shallow as for Bearded Iris. Keep moist until they start. Full sun exposure or part shade. Altho they do well under ordinary garden culture they will do better, grow larger and finer plants and flowers if given half shade, abundant moisture and perhaps a little mulch.

Iris spuria aurea. Pure daffodil yellow. 50c ea. \$4.50 doz.

I. spuria ochroleuca. White with a yellow blotch on falls. There are variations in this species and ours is a superior one. 35c ea. \$3.25 doz.

GLADIOLUS

How to Grow Gladiolus. Glads planted before Mar. 1 in Southern California and thruout the south (a little later in Northern California and early as possible in spring in the East) are reasonably sure to escape the attack of thrips.

Thrips are very small insects that suck the juices from the plant. They cause the flowers to wither or appear burned, and appear only after weather becomes warm. To avoid the damage thrips do, four measures are effective. Plant early. Plant clean, treated bulbs. Keep them reasonably moist and well cultivated, with no weeds. Dust with D.D.T. or Chlordane.

Recently thrips appear to be becoming resistant to D.D.T. Formerly it controlled them but did not kill all. Two years ago we tried dusting with Chlordane 5%. We had no thrips trouble that year nor the next even without dusting. Apparently it killed all. Our program now calls for 2 to 4 dustings with Chlordane 5% powder beginning when plants are 6" tall. We also dust the bulbs in storage. This kills any thrips on the bulbs and keeps off ants (that may carry in aphids or mealy bug) or other pests.

Chlordane is extremely toxic. When dusting, walk on windward side of plants so that dust is blown away from you. Wash thoroly when thru and brush all powder from clothing. When using it keep the hands away from the face. Keep it off of food plants and away from children or pets.

Our bulbs are Chlordane treated, thrips free. Plant large bulbs 4" or 5" deep; small 3"; bulblets 2". Twice their diameter apart. One can plant two rows, staggered in a 4" wide furrow or closer in a single row. Rows about 20" apart. Alkaline soils produce poor Glads. Soil should be neutral to mildly acid. Leaf mould or peat added is useful. Use no fresh manure, but well rotted manure is good. Top mulch of leaf mould or peat is good.

Keep Glads growing with plenty of water and best culture for about two months after flowering. It is best to dig bulbs in the south, and necessary in the north.

Sizes and Prices. L. means "large," size 1 and 2, 1¼" up in diameter. M. is "medium" and includes No. 3 and 4 sizes, ¾" to 1¼" diam. S. means "small," under ¾" diam. Large and medium bulbs give good long spikes. Small bulbs usually bloom in most varieties and when planted early, given good culture and plenty of water they usually make fairly long spikes. Early planted bulblets often flower. Large bulbs bloom earlier and throw more and longer spikes. **Prices** are for one bulb as elsewhere in this catalog. A dozen, all of one sort, costs ten times the price of one unless otherwise stated. Six are sold at dozen rate. Don't forget **Sales Tax** in California.

Substitution. If you order early there is likely to be no substitution, but when out of a variety we send another as nearly like it as possible and of equal or greater value. If you do not approve this, request no substitution.

Please note. Only a few sorts are listed below for your first planting. In our Jan. Spring Catalog several other varieties will be offered. The following are all quoted in large sizes. In the spring we will also offer medium and small sizes and bulblets.

Burma. Large, very deep rose, deeply ruffled. Very many flowers open at one time. One of the most beautiful. 15c ea.

Capehart. Light salmon rose. 6 to 8 open. Early commercial cut flower. 6c ea. 60c doz. Per 100, \$5.00. 500 for \$20.00. \$35.00 per 1,000.

Chaumony. Beautiful, bright rose with silver edge. Much like beautiful Oregon Rose, which is a weak sort here. But Chaumony is a good grower. 10c ea. \$1.00 doz.

Ethel Cave Cole. Very large soft pink flowers, as many as 10 open at one time. In any flower market this, when offered, is the favorite of florists. A little better than Capehart but a few days later. L. 6c ea. 60c doz. Per 100, \$4.75. Per 500, \$20.00. Per 1,000, \$35.00.

Los Angeles. Now chiefly grown in greenhouse or in very mild climates for winter flowers as it likes cool weather and is not good in hot weather. Very vigorous. I've seen 100 flowers produced from one large bulb. To do its best plant 6" apart and give much water. A prominent professor of floriculture advises using it in breeding because of its strong, hardy nature and fine color. 5c ea. 50c doz \$3.50 per 100.

Margaret Beaton. Large white with scarlet throat. Standard cut flower sort. L. 6c ea. 60c doz. Per 100, \$4.75.

Mother Kadel. One of the finest pure yellows. 8c each. 80c doz.

Pacifica. Very early, tall, large white, much used by florists. Healthy and easy to grow. 7c ea. 65c doz. Per 100, \$5.00.

Red Charm. Rightly named, a charming red of pure color, no markings. An outstanding exhibition and commercial flower. 10c ea. \$1.00 doz.

Red Unknown. Fine vivid color, tall spikes and very early. The label was lost but it is so good and sells so well as a cut flower that we continue to propagate it. Because unnamed we price it low. L. 7c ea. 65c doz. \$5.00 per 100.

Snow Princess. Usually accepted as the best pure white commercial gladiolus. 8c ea. 75c doz.

Assorted Varieties. This is an accidental mixture and thus not a balanced mixture. For the same reason it may contain anything. Sizes 1, 2 and 3. 5c ea. 50c doz. \$7.00 per 100. \$25.00 per 1,000.

Gladiolus Nanus. Baby Glads. In the deep south these are winter or very early spring growers and flower long before the large type. The small, exquisite flowers are most desirable for bouquets or any florists' use. Altho higher in price, they multiply rapidly and one can soon have a good stock.

They may also be grown from seed and may be crossed to produce new sorts. In the north they may be grown in pots in a cool room in plenty of sunlight. 18" to 30" tall.

Foster's Purple. This may be a species or a hybrid. We name it for one who grew it. The color is a vivid purple. A most desirable, unusual and rare sort. Price reduced to 35c ea. or \$3.00 per doz.

Charm. Fine, rosy lavender, 25c ea. \$2.50 doz.

The Bride. Fine, pure white, 20c ea. \$1.75 doz.

Watsonias. Close relative of the Gladiolus but winter growing and earlier in bloom. They grow as tall or taller. The flowers are smaller but in very lovely spikes useful for cutting. The colors are varied, in most pleasing pastel tones, and bloom early if planted early. Better even the second and third years. Easy to have them for Decoration Day or before in Southern California. In most cases we have discarded names and substituted the name of their color.

Culture. About the same as Glads. In the south they must be planted in early fall. At present, we will recommend them only for the deep south. Some report them hardy down to 0° but here ours start into early growth. For the last two years, when tops were 3' tall, we have had extreme cold, down once to 20° and tops were frozen back. The result was no flowers, and we lost many bulbs (or corms). We can offer only one—the best—this year.

Watsonia, Giant Lavender. This is not lavender but purple. Very large, tall plant with long spike of very large flowers. Large corms for 40c ea. \$3.50 per doz. No rate on 100. Mixed var. \$1.50 doz.

Freesias, Sparaxis, Ixias, Tritonias and Babianas are a closely related group of the Iris Family. Baby Glads are intermediate between these and the large Gladiolus. The culture requirements are similar.

How to Grow Freesias, Sparaxis, Ixias, Tritonias and Babianas. This closely related group of bulbs have similar culture requirements. All are hardy only in the south where winter temperatures go no lower than about 26°. At about that temperature some injury results but bulbs survive. They mature if even several degrees colder. Where temperatures are colder they may be grown in cold frames, cloth house or unheated houses.

In the north, all are fine bulbs for pots in a cool room in the house or greenhouse. As they are naturally winter growers, they must have cool conditions and they do not flower well when forced at a temperature range of much above 40° to 60°.

They should be grown in flats 4" deep or in bulb pots or pans. A friable sandy loam with much leaf mould added is the best soil. If part of the humus is from composted, well rotted manure, better flowers result. Plant 6 to 8 bulbs in a 5" to 7" pot and cover lightly.

In the outside garden, bulbs may be planted 2" to 3" deep and 10 to 20 to the foot, according to size. Give full sun exposure. Plant or pot early. October is the best month. Good results follow Nov. planting and Dec. planted bulbs usually flower well but stems are shorter and flowers are usually a little smaller. We supply the largest bulbs we can grow or buy as they give stronger plants, larger and better flowers and are more sure to give maximum results than small bulbs.

Freesias are the most deliciously fragrant flowers one can grow. The fragrance is not too heavy and is not cloying in the house or outside.

We offer **Mammoth White**, pure white flowers; **Mammoth Yellow**, pure daffodil yellow; **Oriole**, deep orange, and **Blanch Blue**, best and largest blue.

All are large forcing size corms, as are necessary for success in pot culture, and equally desirable for the outdoor garden as they will have large flowers on longer scapes. **Price**, 15c each. 2 for 25c. \$1.25 doz. The quantity rates apply only to the bulbs in one bag. Thus one of each if separately labelled take the single rate.

Sparaxis are closely related to Freesias, but are far more colorful. The colors range thru vivid tones of bright red, crimson, carmine, pink, apricot and sometimes an almost white one. A few reds are almost maroon. There is usually a contrasting color in throat. They are a little taller than Freesias

and the flowers are larger, more flat and wide open. For pots, or winter flowers, few plants will create as much bright color as *Sparaxis*. No fragrance. Assorted colors, 2 for 15c. 65c doz. \$4.00 per 100.

Ixias are 15" to 24" tall, have slender, wiry stems, nice for cutting. Flowers close at night and on dark days but the pink striped, long buds are even more attractive. Medium size corms, 3 for 15c. 55c doz.

Babiana Hybrids. These are mostly blue. A few may be purple. They are about 10" tall. Very nice in pots or in the southern garden. Corms are small. 3 for 20c. 60c doz.

Tritonia lineata. Grows to 18". White crossed by grey lines. 3 for 15c. 50c doz.

T. hyalina. "Flame Freesias." Orange red to pink. 10c ea. 90c doz.

Marica gracilis. Walking Iris or Apostle Plant. The fugitive 2" flowers, white and blue with yellow and brown markings in center, are lovely. The flowers are followed by a small plant at end of leaf-like scape. These become heavy and bend over to ground and take root, thus walking away from mother plant. **Culture:** give nearly full shade, plenty of water, never drying out. Tender tropical but grown in pots in north. 75c ea. Delivery any time.

Moraea polystachia. African representative of the Irids. 2 ft. stems, covered by a multitude of flowers, mauve and violet with yellow in throat. Blooms profusely in the winter in California or in pots in the north. **Culture:** like freesias. These are very scarce this year, thus higher in price, but you can plant one or a few and raise a lot from the freely produced seed. To see these flowering in winter is to want them. Very large corms, 25c. Flowering size, 15c. \$1.50 doz.

LILY FAMILY — Liliaceae

The type genus is *Lilium*. Many call all bulbs lilies, an error. Included in the Liliaceae are the following bulbs: Hyacinths, Tulips, Muscari, Ornithogalum, Veltheimia, Scillas, etc.

Lilium. This genus includes all true lilies, altho *Gloriosas* are so close that the flowers are similar in form. **Culture.** It is better to plant all true lilies in the fall altho certain types may be planted in spring. The few we list will do well as far north as the Great Lakes but I am not sure about northern Iowa and beyond. In the north, all lilies are benefited by a good winter mulch. Plant 4" to 6" deep (deeper probably in north) in mildly acid soil. Sandy soil is best and all soils for lilies should have addition of much humus—leaf mould, peat. Planted among low shrubs, where tops may reach up into the sunlight, with their feet cool and their heads warm, they are ideally situated. They do well in the half shade of trees or a lath house. All can be grown in pots, but after flowering must be shifted to garden. They do not always recover.

Lilium pardalinum giganteum. Sunset Lily. (Calif. mountains.) To 8 ft. Flowers yellow, tipped with bright red. Petals recurved. 75c ea.

L. Parryi. Also a Calif. native and like the former, hard to get at present. To 4 ft. Fls. pale yellow, spotted on inside. Flowering size bulbs, \$2.25 ea.

L. Willmottiae. From China. To 5 ft. Fls. orange red, spotted with brown. Petals recurved. 40c.

Dutch Hyacinths are universally admired by all flower lovers. Their exquisite beauty, rare fragrance and easy culture contribute to their popularity. We sold so many last year that we could plant back only very small bulbs. As a result we can only offer bedding size bulbs, around 1" diam. and none that are large enough to pot and force. They might flower in pots but flowers would be short stemmed and small and we do not recommend them for potting. Several labels were lost in the field so we will sell only assorted colors. **Culture:** The preferred soil is good sandy loam. Heavier soils that have been made lighter by the addition of humus will do very well. In the south they need to be covered only 2" or 3". In the north plant a little deeper and give enough mulch to protect them. Plant from Oct. to Dec. Early is best. Price 15c ea. \$1.25 doz.

Muscari, Grape Hyacinths, var. Heavenly Blue. Close relative of

Hyacinths. Racemes of exquisite blue bells, closely packed. Grow them in pots or garden. Culture same as hyacinths but plant closer and not as deep. Even small ones will flower in pots but large ones better. Be sure to give yourself the pleasure of growing them both ways. Large bulbs, 2 for 15c. 50c doz. \$3.50 per 100. This will make a fine edging for bulb beds. Blooming size, 35c doz. \$2.25 per 100.

Scillas are closely related to Hyacinths. All are hardy except *S. peruviana* and it has been grown in gardens in Brooklyn on L. I.

Scilla hispanica. Resemble Roman Hyacinths. Require shade. Assorted colors, 35c and 50c doz.

S. hispanica, pink shades, 25c ea.

S. hispanica, var. **Excelsior**. Giant, dark blue. 20c ea.

S. peruviana. An ideal bulb for pots as foliage is nice and the flower raceme is just above foliage on a short stem and wide and rounded in form. Usually blue flowers but we also have a few white. Hardy to N. C. on east coast, and in Long Island. These are worth 75c. We have a lot and offer them for 50c ea. or \$4.25 doz.

S. peruviana. Houdyshel hybrids. We like them so well that we have planted seeds and selected for beauty of foliage and flowers and for variations in color. We now have such unusual shades as markings of yellow, tan and rose and very ornamental wavy foliage. They are assorted, no choice of colors, but if you plant seeds of these you too will get variations. Price 60c and 75c ea.

Ornithogalum arabicum. A round, glossy black ovary in the center of a pure white flower makes a striking contrast at Easter time. Hardy only in south, but in the north they are easy in pots and bloom for Easter if planted early and grown in a cool room in good sun exposure. Low priced, easy to grow and desirable, early white flowers are a winning combination so we grow plenty. L. 20c. \$1.75 doz. One to a 5" pot.

Veltheimia viridifolia. This is one of the most beautiful plants one can grow in a pot. The glossy vivid green leaves are wavy margined and form a perfect rosette much like a bird's nest fern. From the center arises a scape with tubular drooping flowers closely spaced. The color is a deep rosy or purplish pink of an ineffable tone not found in any other flower. It begins to bloom, if planted early, in So. Calif. gardens or other equally mild climates or in pots in the north by Dec. 15 and continues for nearly 3 months as larger bulbs send up 2 to several spikes. **Culture** is very easy. Use a sandy loam soil to which is added fine screened peat or leaf mould about one-fourth. Some charcoal is good. Read general potting directions again. Order before Oct. 1 if possible as foliage starts in storage, but we can ship bulbs with foliage until Jan. 1, usually. Prices, 50c and \$1.00 each.

Tulips. We hope this listing may be a pleasant surprise to our customers as we have not listed them since fall 1947. Holland stocks were depleted during the war and prices were high. But now we can offer you a most attractive price on top sized, 12 cm. or over. This is nearly 5" circumference and 1¼" diam. or over. All are popular varieties, new and older favorites, much used as florists' flowers.

Varieties. DARWIN TULIPS: **City of Haarlem**, deep red. **Clara Butt**, salmon pink. **Pride of Haarlem**, cherry red. **Springfield**, pure white. **William Copeland**, lilac. **IDEAL DARWIN TULIPS:** **Baking Yellow**, yellow. **Gloria Swanson**, enormous raspberry red. **TRIUMPH TULIPS:** **Lord Carnavan**, mauve and white. **Telescopium**, enormous violet rose. **Mr. Zimmerman**, very large rose. All bulbs will be labelled except in collection No. 5.

Prices. Your choice of Tulips, 15c ea. 10 for \$1.25.

In the following collections, except No. 5, there is an even number of each sort. When sold this way we can avoid uneven selling and resulting surpluses of some. This is an advantage to both of us and we can offer much lower prices. Collection No. 5 disposes of the surpluses. Few dealers give you this advantage and the collections are really bargains.

Please Note. Holland growers are sometimes forced to substitute a

variety. We expect to receive every one listed above. But if a substitution is necessary it will be a similar and equally good or better sort.

Tulip Collections. No. 1. One bulb of each of the 10 var. for \$1.25.

No. 2. Three bulbs of each var., total 30 bulbs for \$3.50.

No. 3. Five bulbs of each var., total 50 bulbs for \$5.75.

No. 4. Ten bulbs of each var., total 100 bulbs for \$10.00.

No. 5. In late Nov. we will have on hand a surplus of certain varieties. We will close them out at \$8.50 per 100, unlabelled. In this offer you may not make any choice of varieties. If you also plant any of the other collections, which are all labelled, you should be able to identify your varieties. We have planted 2 months later than this and had very good flowers tho stems were not so long. In the north where ground freezes early, prepare your bed and protect with a heavy mulch to prevent freezing.

Culture. Tulips like a sandy loam best. Our own soil is naturally heavy but much humus in the form of leaf mould, rotted manure, peat, etc., has been added and in such a soil they thrive perfectly. One should add humus also to a sandy soil. Good growers differ about planting depth. Large bulbs may be planted 4" to 9" deep. In the north, deep planting is advisable. Deep planting results in less breaking up of large bulbs into smaller sizes. One gets less increase but larger sizes. With shallow planting the bulbs increase enormously in number but sizes are smaller. There will be more flowers the following year but the stems will be shorter. In the south, one gets very good results when planting 4" to 6" deep. The shallow planted bulbs will flower a little earlier.

Better results follow if soil is worked to a depth 10" below the bulbs. The soil under the bulbs needs the addition of humus as much as that above because it will contain the feeding roots. Tulips are good feeders and one can use 5 lbs. of bonemeal and 5 lbs. ground dry sheep or dairy manure or old well rotted manure for 100 bulbs. It is better to cover this soil with 2" of sand or loam as the bulbs should not touch manure.

Many believe we cannot grow good tulips in arid climates like So. Calif., but I have grown them undisturbed for as long as 10 years. We plant the bulbs in moist soil which will start the roots in 3 or 4 weeks. When roots are started we begin to irrigate. Thereafter they should receive a good soaking every 10 days unless rains supply it. Continue this thruout winter. Tulips do best in climates like Oregon where rainfall is heavy. Imitate nature and you will get equal results.

Forcing Tulips. Pot the bulbs in soil similar to that for outdoor culture, near soil surface. Three in a 5" pot. Press the soil down well and water thoroly. The pots may then be set in a cool out building or better still set them in a trench, about 8" deep and fill in with sand or soil. They must not freeze or become dry. Do this as soon as bulbs are received or not later than Oct. One can begin forcing as soon as pots are well filled by roots. Some may be ready by Jan. 1. Bring them to a cool room, at first about 60°. Later about 65° or a little more but reduced when in flower.

OXALIS FAMILY — Oxalidaceae

There are two types, the winter and the summer growing. The summer growing species are listed in our spring catalogs. The following are all winter growers. These are brightest and most vivid of winter flowers for a sunny window or in the garden in the south. They give a profusion of bloom over several months period. A bed looks like a carpet of solid pink, rose, white, yellow, etc. The flowers are large, some over 1" diam.

Culture. Plant about 2" deep, 3" apart. Large bulbs may be farther apart and a little deeper. In pots, the smaller may go 6 in a 4" pot. Use good rich soil, altho they will grow in any soil. Give full sun exposure as they open only in full light and close at night. Order and plant early as they begin to sprout even in August. But they may be shipped even with long sprouts up to mid-October.

Oxalis Bowiei. A large plant with bright rose red flowers. 3 bulbs to a 5" pot. 5c each. 50c doz. \$3.75 per 100. Largest size 10c each.

O. cernua. Bermuda Buttercup. Deep golden yellow flowers. Very profuse. 5c each. 50c doz. \$3.50 per 100. Extra large jumbo bulbs 10c. 3 for 25c. 85c doz.

O. Grand Duchess. Low growing plants, but give a profusion of very large flowers in three colors. The **Pink, Lavender and White**, 5c each. 45c doz. \$3.00 per 100. Largest size 10c each.

O. crassipes. Flowers bright rose. Evergreen and everblooming. Increases by tubers and can be moved at any time. Plant at once. Large tubers 25c each. 6 for \$1.00.

O. crassipes alba. A pure white form. Very pretty and always in bloom. 50c each.

Oxalis Special. The bulbs offered in this lot are assorted in size and color. They will all flower well. Some are accidentally mixed, others are surplus. Price 30 for \$1.00.

THE CALLA LILY FAMILY — Araceae

This family contains the so-called Calla Lilies or Zantedeschia, Black Callas and other Aroids.

Culture. All Zantedeschias and Arum palaestinum are suitable for pot culture. A. palaestinum will start about Sept. or later. Do not put this bulb into moist soil before that or it will rot. Zantedeschias—pink, yellow and spotted leaf—may be potted by about Dec. 15. Don't rush them, as too much water before they start to grow may rot them. They may be held back and started in early spring, here in late February. All do well in the garden in a moist semi-shaded cool place. They are not hardy in cold climates; dig in fall. The White Calla usually blooms in California in the garden in late winter. They may be planted in early fall in pots or garden. All do best in mildly acid soils, on sandy side. For acidity add peat.

It is an error to keep large White Callas growing continuously. If rested thru summer you will be rewarded with flowers. Callas as pot plants need some sun, enough to prevent spindly growth, plenty of light and like all plants, good ventilation. They need abundant water but good drainage.

Zantedeschia aethiopica. Well known **White Calla.** They can be potted anytime between Sept. 1 and Jan. 1. Even later if available. Water once when potted to settle soil. Then keep soil barely moist until growth is well started. When growing well they need plenty of water and perfect drainage give about half shade. They are hardy out doors down to 15° but tops may be cut down by frost at about 20°. Blooming size, 25c. Large 50c.

Z. rehmanni elegans. **Light pink Calla.** Easier to grow and flower than the dark pink. A few are very light, almost white when forced, but darker in the garden, but always beautiful. 50c ea.

Z. elliotiana. Deep Golden Yellow Calla. Like all the callas, they need some sun. If they do not have it they grow too tall and weak and may fail to flower. Half sun is usually right. 30c ea.

Arum palaestinum. **Black Calla. Solomon's Lily.** Foilage and flowers are shaped like callas but flowers are black. Plant 4" deep in garden, not so deep in a pot. Begin to water about Sept. 1. Flowers in Feb. Large for 75c and \$1.00 ea.

Anthurium. Until very recently these have been high in price. We have had constant inquiries for them and now that prices are really reasonable we are pleased to list them. The cordate leaves make them useful as foliage plants alone but a mature plant will flower six times a year. Flowers are calla-like in red, pink and sometimes white. They are much used as florists flowers and rank with orchids in value. Flowers last 6 weeks on a plant. There are always flowers on a few plants in all seasons.

Anthurium adreanum. Shaffer Hybrids. These are considered to be the best Anthuriums. Fls. up to 6" long, orange-red, varying to rose or white. 6" to 8" plants that should begin to flower at 12". Price \$3.50.

A. scherzerianum. The leaves are lance shaped. Fls. 3" long, varying from deep red to rose and white. Easiest to grow. Small plants that should flower in about 6 mo. \$2.50. These are recommended as house plants.

For the prices listed we ship Anthuriums loose roots. By mail, postpaid.

Be sure to send 25c extra for insurance and special handling. For only 25c extra we will ship in pots, in their correct soil, by express, f.o.b. The plant should have sufficient advantage this way to pay difference in cost. They can only go by express to the north in cold weather as 45° is their minimum safe temperature.

Culture. They are shade plants and should have about the same exposure as African violets and Cattleya orchids which is very little sun but in good light. **Soil formula.** $\frac{1}{2}$ peat, $\frac{1}{4}$ leaf mould, preferably oak, $\frac{1}{4}$ coarse sand or vermiculite, a rounded tablespoon of dried and powdered dairy or steer manure to a 5" pot. Potting material should drain well, hence we use coarse sand instead of vermiculite. A half quantity of each may be better. The plants require a warm humid atmosphere. The minimum night temp. preferred is 60° to 65°. Higher in day time. 45° to 100° will do little harm. *A. scherzerianum* more readily adapts to lesser humidity or temperatures under 60° than the *A. andreanum* and is easier as a house plant. Where you can grow and flower Saintpaulias, Gloxinias or Cattleyas you should be able to grow Anthuriums but higher humidity will help them succeed. When in thrifty growth, if a fertilizer is needed, one can use Spoonit once a month. Plants need liberal watering and should never become dry.

THE GESNERIA FAMILY — Gesneriaceae

In this family belong the species *Gesneria*, *Gloxinia*, *Sinnigia*, *Achimenes*, *Saintpaulias*, *Isoloma*, *Naegelia*, etc. Most of these are listed in our spring, (Jan.) catalog.

Gloxinias. We have six varieties that are quite rare and difficult to get which we are now growing from seed. We are not sure when they will be ready to ship but we expect to try to force them into dormancy in Dec. If we succeed, they will be shipped then. We expect only small tubers $\frac{1}{2}$ " to 1" diam., but this size will flower well. If in Dec. it appears that we should let them grow longer, we may send as late as Mar. 15. Do not notify us of non-receipt before Apr. 1.

If you need culture directions, please refer to our Spring 1950 cat. If you do not have a copy we can supply a copy for 10c extra. This will be repeated in Spring, (Jan.) 1951 cat.

As the supply will be very limited and we know of no source for the purchaser of tubers, we offer them now so that you may reserve any that you want by full prepayment with the order. Price \$1.00 ea. No quantity rates except one of each 6 var. for \$5.75. The varieties and descriptions follow.

Frederick Benary, Scarlet, white throat. **Beacon**, rich dark red. **Crimson Glow**, glowing scarlet. **Swiss Emblem**, scarlet and red, white markings. **Merveille**, brilliant red, white edge. **Rose Sensation**, brilliant carmine rose. Assorted seedlings, small, not like above. 45c. Same delivery date.

Saintpaulia or **African Violet**. First discovered in equatorial east Africa as recently as 1890, no other plant has ever had the phenomenal growth in popularity in so short a period of time. It seems to fit into the life-conditions of these times better than most plants. Houses and rooms are now smaller and these are compact small plants. They flower not once a year but all the time. They like the temperatures and living conditions that we like. For full culture directions please refer to our 1949 Saintpaulia price list. We have few left and they are not available now for free distribution. Please send a dime when you request one. If you do not have a copy one will be included free with your order only if you request it.

Please order from the following list at new reduced prices. This is a partial list only. If there is any other that you want, inquire for it and we may have it as we have many in small quantity. Please note that the following are arranged in price groups, beginning at 75c. Any plant in a group will be sent for the price mentioned as its group price. If your order is for less than \$2.00 please send 25c extra for postage and send 20c extra in all cases for insurance and special handling. This means that plants will travel more rapidly and arrive in better condition.

Order promptly. We cannot send plants by mail in winter when they

are likely to encounter temperatures under 45° which is the limit of their endurance. But we can ship by express, f.o.b. if you so require, in winter.

75c ea. Admiral, deep purple. **Blue Boy**, deep blue violet. **Ionantha**, light blue violet. **Kewensis**, deep violet. **Sapphire**, deep blue violet or sapphire blue.

\$1.00 ea. Amethyst, lavender with bicolor tendency, free blooming. **Bicolor**, **Blue Bird**, medium blue violet. **Blue Girl**. Patented. **Blushing Maiden**, white overlaid with blush pink. **Double Blue Boy**, (Double Duchess). **Du Pont Blue**, medium blue violet. **Du Pont Lavender Pink**, true orchid with deeper lavender around outer edge of petals. **Frieda**. Dark red violet. **Mentor Boy**, purple. **Neptune**, blue violet. **Norseman**, medium blue violet. **Orchid Beauty**. (Mary Wac.) lavender pink or orchid with bicolor tendency. **Pink Beauty**, patented. **Pink Star**. **Pink Leatherneck**, large growing. **Purple Prince**, very deep purple, free blooming. **Red Head**, medium red violet. **Sailor Boy**, pale blue violet. Fls. freely.

\$1.25 ea. Azure Glory, blue. **Blue Boy Supreme**, deep blue violet. **Blue Eyes**, pale blue violet. **Blue Butterfly**, light blue. **Commodore**, very deep purple. **Marine**, very large fl. and leaves, lovely, lavender blue. **Merkel's Giant Blue**. **Pink Amethyst** (West Coast Amethyst.) Good bloomer. Lavender pink with bicolor tendency. **Redland**, deep red violet. **Red Queen**. **Sky Blue**. (Tinted Lady), white overlaid with a tint of light grey blue. **Moonbeam**, white. **Viking**, deep blue violet.

\$1.50 ea. Blue Chard, medium blue violet. **Blue Flute**, medium blue violet. **Blue Girl Supreme**, deep blue violet. Fls. freely. **Blushing Maiden Supreme**, white overlaid with blush pink, deeper in center. **Double Orchid**, sm. plants only. **Dainty Maid**. Pink, fls. freely. **Du Pont Silver Pink**, sm. plants, light pink, silver overcast. **Hendrix's Ethel**. Dupont Lavender Pink seedling, fls. freely, very large leaves, fast grower. Sm. plants only. **La Jolla Plum**, sm. plants, fls. beautiful deep plum. **Orchid Girl**, med. red violet. **Old Lace**, sm. plants. Blue Flowers. **Pink Supreme**. **Red Head Supreme**. **Red Girl**.

\$2.00 ea. Du Pont Blue Series 1 to 5. No. 1 the darkest to No. 5 the lightest blue. **Lady Geneva**, patented. Violet blue with white edge. **Periwinkle**. Light grey blue with white eye.

THE ORCHID FAMILY — Orchidaceae

We usually send out a new Orchid Price List in July. Altho we had many requests for a new list we lacked the time to prepare one. We are therefore giving you a list here of the orchids we can furnish, and revising the prices far down on nearly all. On a very few the price may be higher because they are one year older and much larger plants. The descriptions and culture is omitted here. For those, please refer to our booklet, "How To Grow Orchids," price 25c and to our 1949 Orchid Price List which describes most of the plants and gives the culture of Cattleyas. We have so few copies of this that we are unable to distribute them free. Send a dime, for this.

Some of the Cattleyas, offered at a lower price are actually larger plants. Cattleyas offered under \$5.00 are mostly not a flowering size tho some of them may flower in their correct season but with small flowers.

Cattleya species. Amethystina (intermedia) \$3.50 and \$5.00. Very large, \$7.50. (Plants described as very large can be divided into 2, 3 or more and repotted.) **Gaskelliana**, \$6.50. Large plants, \$10.00. **Gigas**, \$6.50. Small seedlings of 2 selected good var. in 2" pots, \$2.00 ea. Three for \$5.75. Five for \$9.50. Postpaid. **Labiata**. \$7.50. **Mendelli**, \$7.50. **Mossiae**, \$5.00 and \$7.50. **Percivalliana**, \$5.00 and \$7.50. **Schroederae**, \$5.00 and \$7.50. **Speciosissima**, \$5.00 and \$7.50. **Trianae**, \$5.00 and \$7.50.

Cattleya Hybrids. Apex, \$7.50. **Barbara Rapella**, \$10.00. **Edna Richter**, \$10.00. **Enid**. In bud sheath now on Aug. 1, \$15.00. Smaller for \$12.50. Order before Oct. 15 for plants in sheath. **Highburiensis**, \$7.50. **Lily Anthony**, \$7.50. **Louise Meiser**, (very rapid, easy grower). White to lavender, \$7.50. **Oenone**, \$10.00. **Queen Alexandra**, \$10.00. **Robertiana**, this hybrid is a rapid grower and bulbs are often curved but flowers are very beautiful, \$7.50. Very large plants, \$10.00 and \$12.50. **Sandra Ozella**. Plants are larger than when listed and are now almost flowering size, \$17.50. **Titrianae**, \$7.50.

In ordering any of the above species and hybrids it is advisable to state a second and even a third choice unless you order very early. On some, our stock is small and at above prices, they are likely to sell out rather early.

Special Offer of Hybrid Cattleyas. We have recently divided some very large pots that had grown over the sides of the old pots. These are now in new osmundine and established in 6" pans. A few are in 5" pots. Every one will be labelled, but there are only a few pots of some sorts, so we will not list the names but will send you our selection from those available when you order. These are newer hybrids of excellent quality. The colors are nearly all in shades of lavender tho a few may be white with colored lip.

The largest plants are priced at \$7.50. The second sizes at \$5.00. As to actual value even 2 or 3 back bulbs should be worth the latter price. A few are in bud sheath and these may flower in 3 or 4 months.

Note please that we ship Cattleyas in their clay pots by express f.o.b. only.

Cymbidium Special for fall delivery. These are shipped, loose roots, not potted, by mail postpaid. It is too difficult to ship these in pots. They cannot be sent by mail in cold weather. Varieties: **Butterfly, Doreen, Giganteum, Moira, Winter Cheer, Zebra, Insigne** (dwarf var. for smaller pots). Price \$2.50 per front bulb with foilage. **Madeline**, \$5.00. **Hookerianum**, fine green flowers, \$7.50. Clumps of 2 or 3 at same rate per bulb. Small offsets, if any will not be detached. These are the lowest prices I have seen on full sized, front bulbs. We can furnish back bulbs, assorted, unlabelled varieties for \$1.00 ea. They usually make a new growth if potted in pure peat or sand and peat and kept wet. Insert only base of bulb.

Oncidium varicosom Rogersii. In osmundine in clay pot, express, f.o.b. \$6.00.

Odontoglossum Rossii, paper pot, postpaid, \$1.00 and \$2.00.

Laelia grandiflora, small in paper pot, \$1.00.

We have a very few only of some other varieties that are listed in our Orchid Price List but omitted here. You may order them at list prices.

Bletilla hyacintha. This terrestrial orchid is hardy and may grown in the garden. 8 or 10 small orchids are born on a 12" scape. Each flower is about 1½" wide and of true orchid form and color. Plant about 4" or 5" deep in sandy loam enriched by an equal portion of peat or leaf mould. They are hardy in Ohio. Delivered in Nov. Plant at once when received. Two colors, rose purple or white. Price 85c each.

RANUNCULUS AND ANEMONES — Ranunculaceae

Ranunculus range in color from red, pink, yellow to white. The strain if well grown produces giant double flowers on tall stems.

Anemones are red, pink, white and blue but blue predominate. The flowers of this strain are mostly single which we prefer in Anemones.

Culture. Best planting time is Sept. Bulbs start better in a medium temperature. In hot weather, start them in a flat in the cool shade of a tree. In cold weather start them in a moderately warm room. When not over 1" high transfer to garden. For pots, place pots when starting the bulbs as directed for the flats. The best soil is rich sandy loam. To heavier soils add much leaf mould. Do not water much when sprouting as the best bulbs will rot if too wet.

We offer only the large size. They cost much more per bulb but each bulb gives so many flowers that your flowers cost no more and are earlier, larger, better and more sure.

Tecolote Giant Double Ranunculus. 10c each. 50c doz.

Anemones, large size bulbs, same price as Ranunculus.

THE PINEAPPLE FAMILY — Bromeliaceae

Bromeliads include Billbergia, Cryptanthus, Aregelia, Tillandsia, Neoregelia and many more genera. We list Billbergias and only a few others that require the same culture. These include some of the most unusual and

fascinating plants. Not only are the flowers in intriguing pastel but the floral display is made brilliant by the large vividly colored bracts that cover the scape. The leaves form a rosette and are more or less rigid. Some have brightly colored leaves and others are often mottled, striped or barred. All are desirable foliage plants.

How to Grow Billbergias. All are tropical or semitropical and thus are hardy in outdoor gardens only in the deep south. But they are all easy to grow in pots and add distinction as well as beauty to the window garden.

In pots, they should have a soil of $\frac{1}{4}$ sand or sandy loam and $\frac{3}{4}$ peat, or leaf mould. There should be plenty of drainage material in the pot as poor drainage may soon destroy them. Do not overwater when first planted or in winter when semi-dormant. Nor should they become dry enough to shrivel the foliage. In hot weather when they are growing well, water liberally. Keep a drink of water in their cups in the center.

In the outdoor garden they should have the same soil as recommended for pots. A few, like "nutans," will grow in nearly any soil but will do much better in the type recommended.

They need about half shade. Too much sun will burn and finally destroy the foliage. Those species and varieties having highly colored foliage do not develop their rich colors when too deeply shaded. Most of our plants are grown in a well shaded Clivia house. When well established and growing, richer colors may be brought out by giving a little more sun than we do.

Aregelia spectabilis. The bronze foliage with greyish green transverse bands on the outside make this a spectacular plant. \$3.50.

Billbergia calophylla. Large, bronze-green foliage with contrasting bars of grey. Very large, showy inflorescence of blood-red bracts and blue flowers. \$2.00.

B. corina. Beautiful foliage, barred grey. \$2.50.

B. distachia. Foliage, reddish green with cream spots. Long flower racemes with rose pink bracts and blue flowers with green margin. Blooms early spring and again in late summer. 50c. Three clones, slightly different, one of each for \$1.15.

B. nutans. The most popular of all as it blooms in midwinter and is very lovely. Pink bracts, blue and green flowers. 50c. Three for \$1.00.

B. nutans x cryptanthus acaulis. A highly colored hybrid with bronze and green leaves. Compact growth. \$2.00.

B. Pyramidalis Hybrid. Pyramidalis x Amoena. Both parents are outstanding and this hybrid is no less. Beautiful in foliage and inflorescence. \$2.25.

B. rubro-cyanea. The most colorful in foliage, showing green, white and red combinations. Inflorescence, crimson bracts, flowers green, edged dark blue. To bring out colors in foliage give more sun exposure being careful that foliage does not burn. Two seedlings of this sanderiana-nutans hybrids at \$1.25 ea. or both for \$2.00.

B. speciosa. Foliage green above. Under side greyish green. Bracts rose, flowers pale green tipped with blue. \$2.00.

B. Theodore L. Meade. (Meade's Hybrid). Nutans x Nobile. Handsome green foliage with vivid large inflorescence. It is called an everbloomer. But this does not mean that one plant blooms continuously or even almost. However a large group of plants will show flowers for nearly the entire year. It has no definite season but flowers from new leads as they reach the proper maturity. \$2.00.

B. thrysiflora. Mature foliage faintly barred. Summer blooming. Vivid inflorescence, scarlet bracts, blue and purple flowers. \$1.50.

B. Zebrina. Leaves with contrasting white bands and spots. Salmon bracts and green flowers. \$2.50.

Collection of all 12 varieties, \$20.00.

The Big Four Collection includes Nutans, Distachia and two slightly different clones of Rubro-cyanea. Here you have the most colorful in foliage and a mid-winter bloomer, that would cost you singly \$3.50. The 4 for \$2.75.